Installing the Avaya™ S8700 Media Server for Multi-Connect Configurations

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Notice

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

Preventing Toll Fraud

“Toll fraud” is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, in the United States and Canada, call the Technical Service Center's Toll Fraud Intervention Hotline at 1-800-643-2353.

How to Get Help

For additional support telephone numbers, go to the Avaya Web site:
http://www.avaya.com/
Click Support. If you are:

- Within the United States, click *Escalation Lists*, which includes escalation phone numbers within the USA.
- Outside the United States, click *Escalation Lists* then click *Global Escalation List*, which includes phone numbers for the regional Centers of Excellence.

Providing Telecommunications Security

Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's “telecommunications equipment” includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, “networked equipment”).

An “outside party” is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a “malicious party” is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

Responsibility for Your Company’s Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - Avaya’s customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products.

Voice Over Internet Protcal (VoIP)

If the equipment supports Voice over Internet Protocol (VoIP) facilities, you may experience certain compromises in performance, reliability and security, even when the equipment performs as warranted. These compromises may become more acute if you fail to follow Avaya's recommendations for configuration, operation and use of the equipment. YOU ACKNOWLEDGE THAT YOU ARE AWARE OF THESE RISKS AND THAT YOU HAVE DETERMINED THEY ARE ACCEPTABLE FOR YOUR APPLICATION OF THE EQUIPMENT. YOU ALSO ACKNOWLEDGE THAT, UNLESS EXPRESSLY PROVIDED IN ANOTHER AGREEMENT, YOU ARE SOLELY RESPONSIBLE FOR (1) ENSURING THAT YOUR NETWORKS AND SYSTEMS ARE ADEQUATELY SECURED AGAINST UNAUTHORIZED INTRUSION AND (2) BACKING UP YOUR DATA AND FILES.

Standards Compliance

Avaya Inc. is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Avaya Inc. The correction of interference caused by such unauthorized modifications, substitution or attachment will be the responsibility of the user. Pursuant to Part 15 of the Federal Communications Commission (FCC) Rules, the user is cautioned that changes or modifications not expressly approved by Avaya Inc. could void the user’s authority to operate this equipment.
The equipment described in this manual complies with standards of the following organizations and laws, as applicable:

- Australian Communications Agency (ACA)
- American National Standards Institute (ANSI)
- Canadian Standards Association (CSA)
- Committee for European Electrotechnical Standardization (CENELEC) – European Norms (EN’s)
- Digital Private Network Signaling System (DPNSS)
- European Computer Manufacturers Association (ECMA)
- European Telecommunications Standards Institute (ETSI)
- FCC Rules Parts 15 and 68
- International Electrotechnical Commission (IEC)
- International Special Committee on Radio Interference (CISPR)
- International Telecommunications Union - Telephony (ITU-T)
- ISDN PBX Network Specification (IPNS)
- National ISDN-1
- National ISDN-2
- Underwriters Laboratories (UL)

Product Safety Standards

This product complies with and conforms to the following international Product Safety standards as applicable:

Safety of Information Technology Equipment, IEC 60950, 3rd Edition including all relevant national deviations as listed in Compliance with IEC for Electrical Equipment (IECEE) CB-96A.

Safety of Laser products, equipment classification and requirements:

- IEC 60825-1, 1.1 Edition
- Safety of Information Technology Equipment, CAN/CSA-C22.2 No. 60950-00 / UL 60950, 3rd Edition
- Safety Requirements for Customer Equipment, ACA Technical Standard (TS) 001 - 1997
- One or more of the following Mexican national standards, as applicable: NOM 001 SCFI 1993, NOM SCFI 016 1993, NOM 019 SCFI 1998

Electromagnetic Compatibility (EMC) Standards

This product complies with and conforms to the following international EMC standards and all relevant national deviations:

Limits and Methods of Measurement of Radio Interference of Information Technology Equipment, CISPR 22:1997 and EN55022:1998.

Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement, CISPR 24:1997 and EN55024:1998, including:

- Electrostatic Discharge (ESD) IEC 61000-4-2
- Radiated Immunity IEC 61000-4-3
- Electrical Fast Transient IEC 61000-4-4
- Lightning Effects IEC 61000-4-5
- Conducted Immunity IEC 61000-4-6
- Mains Frequency Magnetic Field IEC 61000-4-8
- Voltage Dips and Variations IEC 61000-4-11
- Powerline Harmonics IEC 61000-3-2
- Voltage Fluctuations and Flicker IEC 61000-3-3

Federal Communications Commission Statement

Part 15:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 rules. This equipment returns answer-supervision signals to the public switched network when:

- answered by the called station,
- answered by the attendant, or
- routed to a recorded announcement that can be administered by the customer premises equipment (CPE) user.

This equipment returns answer-supervision signals on all direct inward dialed (DID) calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered.
- A busy tone is received.
- A reorder tone is received.

Avaya attests that this registered equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

This equipment complies with Part 68 of the FCC Rules. On the rear of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

REN is not required for some types of analog or digital facilities.

Means of Connection

Connection of this equipment to the telephone network is shown in the following table.

Manufacturer's Port Identifier	**FIC Code**	**SOC/REN/ A.S. Code**	**Network Jacks**
Off/On premises station	OL13C	9.0F	RJ2GX, RJ21X, RJ11C
DID trunk	02RV2-T	0.0B	RJ2GX, RJ21X
CO trunk	02GS2	0.3A	RJ21X
CO trunk	02LS2	0.3A	RJ21X
Tie trunk	TL31M	9.0F	RJ2GX
Basic Rate Interface	02IS5	6.0F, 6.0Y	RJ49C
1.544 digital interface	04DU9-BN, 1KN, 1SN	6.0F	RJ48C, RJ48M
120A2 channel service unit	04DU9-DN	6.0Y	RJ48C

If the terminal equipment (for example, the MultiVantage™ Solution equipment) causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at 1-800-242-2121 or contact your local Avaya representative. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

It is recommended that repairs be performed by Avaya certified technicians.
The equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.
This equipment, if it uses a telephone receiver, is hearing aid compatible.

Canadian Department of Communications (DOC) Interference Information

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

This digital apparatus does not exceed Class A limits for radio noise emission set out in the radio interference regulation of the Canadian Department of Communications.

Le Présent Appareil Nomérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils manicures de la class A préscrites dans le reglement sur le brouillage radioélectrique édicté par le ministére des Communications du Canada.

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

DECLARATIONS OF CONFORMITY

United States FCC Part 68 Supplier's Declaration of Conformity (SDoC)

Avaya Inc. in the United States of America hereby certifies that the equipment described in this document and bearing a TIA TSB-168 label identification number complies with the FCC's Rules and Regulations 47 CFR Part 68, and the Administrative Council on Terminal Attachments (ACTA) adopted technical criteria.
Avaya further asserts that Avaya handset-equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.
Copies of SDoCs signed by the Responsible Party in the U. S. can be obtained by contacting your local sales representative and are available on the following Web site:
http://support.avaya.com/elmodocs2/DoC/SDoC/index.jhtml/
All MultiVantage™ system products are compliant with FCC Part 68, but many have been registered with the FCC before the SDoC process was available. A list of all Avaya registered products may be found at:
http://www.part68.org/
by conducting a search using "Avaya" as manufacturer.

European Union Declarations of Conformity

CE

Avaya Inc. declares that the equipment specified in this document bearing the "CE" (*Conformité Europeénne*) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC). This equipment has been certified to meet CTR3 Basic Rate Interface (BRI) and CTR4 Primary Rate Interface (PRI) and subsets thereof in CTR12 and CTR13, as applicable.

Copies of these Declarations of Conformity (DoCs) signed by the Vice President of MultiVantage™ Solutions research and development, Avaya Inc., can be obtained by contacting your local sales representative and are available on the following Web site:
http://support.avaya.com/elmodocs2/DoC/IDoC/index.jhtml/

Japan

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Network Connections

Digital Connections - The equipment described in this document can be connected to the network digital interfaces throughout the European Union.
Analogue Connections - The equipment described in this document can be connected to the network analogue interfaces throughout the following member states:

Belgium	Germany	Greece	Italy	Luxemburg
Netherlands	Spain	United Kingdom		

LASER Product

The equipment described in this document may contain Class 1 LASER Device(s) if single-mode fiber-optic cable is connected to a remote expansion port network (EPN). The LASER devices operate within the following parameters:

- Maximum power output –5 dBm to -8 dBm
- Center Wavelength 1310 nm to 1360 nm
- CLASS 1 LASER PRODUCT IEC 60825-1: 1998

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. Contact your Avaya representative for more laser product information.

To order copies of this and other documents:

Call: Avaya Publications Center
Voice 1.800.457.1235 or 1.410.568.3680
FAX 1.800.457.1764 or 1.410.891.0207
Write: Globalware Solutions
200 Ward Hill Avenue
Haverhill, MA 01835 USA
Attention: Avaya Account Management
E-mail: totalware@gwsmail.com

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Installing the Avaya S8700 Media Server for Multi-Connect Configuration

These procedures are for installing a new Avaya S8700 Media Server for Multi-Connect Configuration. As part of the procedures for configuring the various pieces of hardware, you use three administration interfaces: media server web interface, Avaya Site Administration interface, and a command line interface.

The following process is included in this installation procedure:

- ‘‘Pre-installation Setup’’ on page 16
- ‘‘Mount the Hardware in the Rack’’ on page 19
- ‘‘Configure the Hardware in the Rack’’ on page 20
- ‘‘Customize the Active Media Server’’ on page 36
- ‘‘Install the Media Gateways’’ on page 41
- ‘‘Cabling Port Networks’’ on page 116
- ‘‘Connect the Hardware’’ on page 242
- ‘‘Completing the Installation Administration’’ on page 261
- ‘‘Accessing the Avaya S8700 Media Server’’ on page 266
- ‘‘Testing the Complete Configuration’’ on page 271

Pre-installation Setup

The pre-install team should have done the following tasks. If they were not all done, do not continue with the installation.

- Verify that the 19-in. (48-cm) equipment rack(s) was installed to EIA 310D or equivalent data rack standards. You may need shelves or some other means to support the very heavy UPSs
- Verify that the 19-in. EIA 310D (48-cm) open equipment rack(s) was installed securely and grounded per *Approved Grounds*. PDF
- Verify that cabling for the Internet Protocol Server Interface (IPSI) circuit packs is labeled and run from the control hardware rack to the port networks.
- Verify that you have the required network information in hand. Refer to the *Pre-Installation Network Worksheet—S8700 Multi-Connect* PDF for the list of required network information.
- Verify that you have all the equipment on site. Refer to the *Pre-Installation Information—S8700 Multi-Connect* PDF for the list of required hardware.
- Verify that the services laptop has the right hardware and software. Refer to the *Pre-Installation Information—S8700 Multi-Connect* PDF for the list of computer specifications.
- Verify that you have the required tools on site. Refer to the *Installation Tool Information—S8700 Multi-Connect* PDF for the list of required tools.
- Verify that you have the current translations available through ProVision if the existing DEFINITY ECS does not have an optical drive.
- Verify that you have the current software, firmware, and required patches. This is not the software, firmware, and any patches that are pre-loaded on the S8700 Media Server but what will be upgraded to after installation.

Downloading License and Authentication Files

Use the License File Remote Feature Activation (RFA) to obtain the license and authentication files. RFA is a Web-based application, available to Avaya employees and authorized Business Partners, that enables the creation and deployment of license files for all switches. The license file enables the switch's software category, release, features, and capacities. License files are created using SAP order information and/or current customer configuration information. Without a license file, the switch does not provide normal call processing.

Without a valid license installed or a mismatched license:

- The system generates a major alarm.
- Depending upon the nature of the error, a 6-day countdown timer starts, but call processing continues unchanged.

- If the countdown timer expires, the switch runs in Administration Mode only, and the call processing capability is limited to incoming and outgoing calls only to pre-administered numbers.

NOTE:
The *init* login no longer has the capability to change the customer options, offer option, or special applications forms.

- Access to Avaya MultiVantage™ software is restricted; the switch does not provide normal call processing.

The Avaya authentication files enable Access Security Gateway (ASG) for the Avaya services logins on the switch. ASG uses a challenge/response protocol to confirm the validity of a user, reducing the opportunity for unauthorized access.

Before starting the installation or, ideally, before coming on site, the license and Avaya authentication files may be downloaded to the services laptop. The license and Avaya authentication files are installed during the installation process.

NOTE:
To access the RFA application, you must take the RFA online training and pass the online test.

RFA Information requirements for new installations

You need the following information before going to the RFA web site:

- Your personal Single Sign-On (SSO) for RFA web site authentication login.
- SAP order number with right to use (RTU) features
- Required customer information
- Serial number of one of the TN2312AP IP server interface circuit packs (this becomes the “reference” IPSI)
- Access to the RFA Information page for these items (if not already installed on your PC):
  - Internet Explorer 5.0 or higher installed on the services laptop
  - Intranet access to your designated RFA portal (refer to "Go to the RFA web site")

Go to the RFA web site

The RFA web site automates some of the installation procedures, including generating license and authentication files. For migrations it may be necessary to create a *Switch Configuration File* for the existing system prior to creating the license file. This will ensure that existing Right To Use features are brought forward to the S8700 Media Server for Multi-connect configurations. Follow the procedures as outlined on the RFA web site.

At your laptop/PC browser, go to the appropriate web site:

- Avaya Associates:
  - ~ http://associate2.avaya.com/sales_market/services and select DEFINITY REMOTE FEATURE ACTIVATION
  - ~ http://services.avaya.com/ and select Remote Feature Activation (RFA), which is listed below Strategy & Operations/Re-Engineering
- Business Partners go to the appropriate regional Business Partner portal:
  - ~ United States: http://www.avaya.com/businesspartner/
  - ~ Canada: https://www.avaya.ca/BusinessPartner
  - ~ Brazil: http://www.avaya.com.br/Home.asp
  - ~ CALA: :http://cala-businesspartner.avaya.com/
  - ~ EMEA: https://emea-businesspartner.avaya.com/
  - ~ APAC: http://www.avaya-apac.com/bp
- Contractors go to http://www.avaya.com/services/rfa/

1. Using your SSO, log into the RFA web site.
2. Click **Start RFA Application**.
3. Complete the information necessary to create and deliver license and authentication files.

Mount the Hardware in the Rack

Refer to *Getting Started with Avaya S8700 Media Server for Multi-Connect Configuration* PDF for installation information.

Configure the Hardware in the Rack

This section covers the following tasks:

- ‘‘Configure the Media Servers’’ on page 20
- ‘‘Configure the UPSs’’ on page 33
- ‘‘Configure the Ethernet Switch(es)’’ on page 35

Configure the Media Servers

Once the hardware is installed you must configure the two media servers, install the license and authentication files, and test the connectivity to the customer’s LAN. You configure the first media server, then configure the second media server.

Using a services laptop computer connected to the services laptop interface (default is port 2, Ethernet 1), access the Media Server Web Interface program resident on each media server for the configuration and some of the other administration. For other administration, access the Media Server either through Avaya Site Administration or by opening a telnet session establishing a Linux shell session.

This section covers the following tasks:

- ‘‘Configure Media Server 1’’ on page 21
- ‘‘Install license and Avaya authentication files’’ on page 25
- ‘‘Verify media server 1 connection to customer’s LAN’’ on page 27
- ‘‘Test Media Server 1 LEDs’’ on page 28
- ‘‘Configure SNMP traps’’ on page 28
- ‘‘Verify date and time’’ on page 29
- ‘‘Connect duplication cables’’ on page 29
- ‘‘Configure Media Server 2’’ on page 29
- ‘‘Verify media server 2 connection to customer’s LAN’’ on page 31
- ‘‘Test media server 2 LEDs’’ on page 32
- ‘‘Busy out standby media server’’ on page 32
- ‘‘Customize the Active Media Server’’ on page 36
- ‘‘Set up Avaya Site Administration - Dedicated Services port’’ on page 36
- ‘‘Set up Avaya Site Administration - Active Media Server’’ on page 37
- ‘‘Input translations’’ on page 37
- ‘‘Reset MultiVantage(TM) software’’ on page 37
- ‘‘Add Media Gateways’’ on page 38
- ‘‘Administer and Enable IPSI(s)’’ on page 38

Configure Media Server 1

This section covers the following tasks:

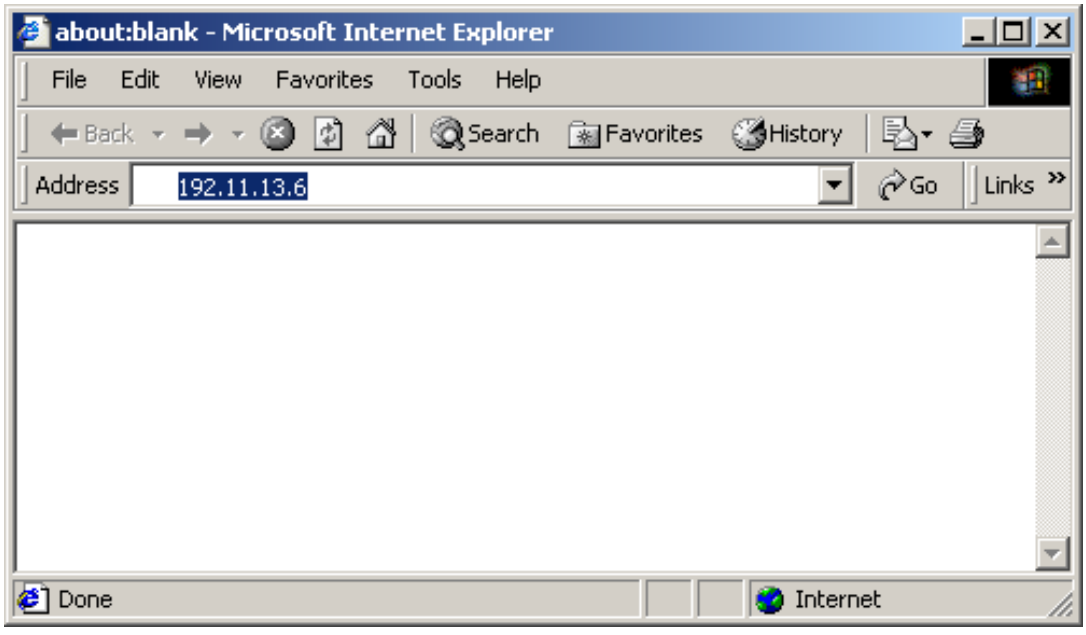
- “Copy license and Avaya authentication files from laptop to Media Server 1’’ on page 25
- “Install license and Avaya authentication files’’ on page 25

The following administration is done on the services laptop computer connected to server 1 using the Web-based administration application.

NOTE:
Make sure you have the complete list of IP addresses and names before starting this process.

NOTE:
Make sure your networking and Web browser settings are correct. Refer to *Pre-Installation Information—S8700 Multi-Connect*. PDF

1. Plug server1 into UPS 1 to power it up. Refer to *Getting Started with Avaya S8700 Media Server for Multi-Connect Configuration*. PDF
2. On the laptop Click **Start** > **Run** to open the Run dialog box.
3. Type **command** and press **Enter** to open a MSDOS Command Line window.
4. Type **arp -d 192.11.13.6** and press **Enter** to clear MAC cache in the laptop. This command will respond with one of the following:
   - The command line prompt when the cache has been cleared.
   - The phrase: The specified entry was not found. This is returned when the specified IP address does not currently contain an entry in the MAC cache.
5. Launch the Web browser.
6. Type **192.11.13.6** in the Location (Netscape) or Address (Internet Explorer) field to bring up the Web interface.



NOTE:
The first time you attempt to login, you get a Web page asking to install a security certificate. Follow the instructions for your particular browser to accept the certificate. You can also install the certificate on your services laptop computer by following the instructions in your browsers online help.

Using Netscape:

Follow the instructions in the New Site Certificate wizard. Select “Accept the certificate for this session”

New Site Certificate - Netscape
New Site Certificate
192.11.13.6 is a site that uses encryption to protect transmitted information. However, Netscape does not recognize the authority who signed its Certificate.
Although Netscape does not recognize the signer of this Certificate, you may decide to accept it anyway so that you can connect to and exchange information with this site.
This assistant will help you decide whether or not you wish to accept this Certificate and to what extent.
Next>
Cancel

Using Internet Explorer:

Follow the instructions in the Security Alert wizard.

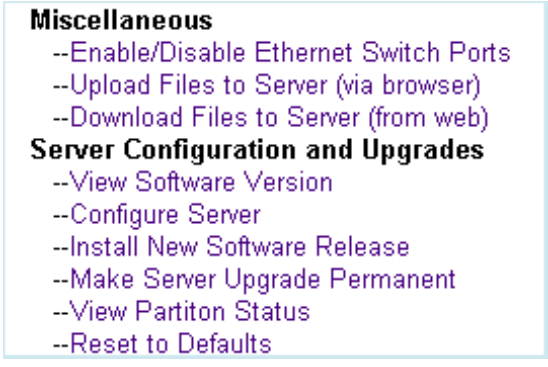
Security Alert
Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.
The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.
The security certificate date is valid.
The name on the security certificate does not match the name of the site.
Do you want to proceed?
Yes
No
View Certificate

7 Log in as **craft**.

8 When asked “Do you want to suppress alarms?”, select “yes.”

NOTE:
The menu choices are in the left panel.

9 Scroll down the menu to Installation and Upgrades

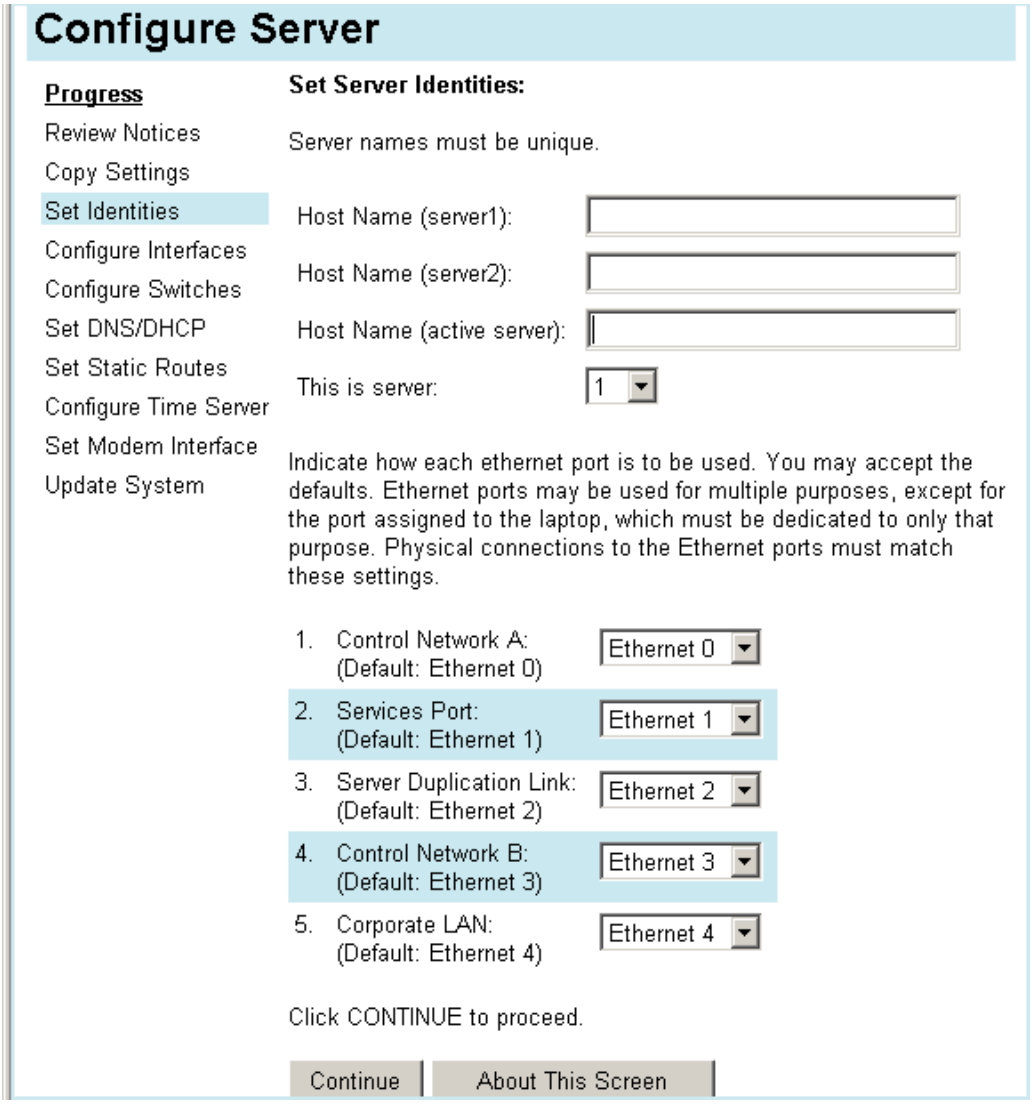


NOTE:
For help with any of the web pages, click **About This Page** on the web page or **Help** at the top of the main menu.

10 Click **Configure Server** to open the first page of the Configure Server wizard.

11 Select Avaya S8700 Media Server for Multi-Connect Configuration and click **Continue**.

12 Click through the Review Notices to get to the Set Server Identities page.


Configure Server
Progress
Review Notices
Copy Settings
Set Identities
Configure Interfaces
Configure Switches
Set DNS/DHCP
Set Static Routes
Configure Time Server
Set Modem Interface
Update System
Set Server Identities:
Server names must be unique.
Host Name (server1):
Host Name (server2):
Host Name (active server):
This is server:
1
Indicate how each ethernet port is to be used. You may accept the defaults. Ethernet ports may be used for multiple purposes, except for the port assigned to the laptop, which must be dedicated to only that purpose. Physical connections to the Ethernet ports must match these settings.
1. Control Network A: (Default: Ethernet 0)
Ethernet 0
2. Services Port: (Default: Ethernet 1)
Ethernet 1
3. Server Duplication Link: (Default: Ethernet 2)
Ethernet 2
4. Control Network B: (Default: Ethernet 3)
Ethernet 3
5. Corporate LAN: (Default: Ethernet 4)
Ethernet 4
Click CONTINUE to proceed.
Continue
About This Screen

NOTE:
Most of the fields are populated with default settings. Do not change the defaults unless the customer requests it (refer to the filled-out Job Aid entitled *Pre-Installation Network Worksheet—S8700 Multi-Connect*).

13 Fill in the fields on the Set Server Identities and the subsequent pages:

- Configure Ethernet Interfaces
- Configure Switches
- Set DNS/DHCP
- Configure Time Server
- Set Modem Interface
- Update System

NOTE:
The server is not configured until you click Continue on the Update System page.

14 When you complete all the fields, the Update System screen displays each configuration task as it completes it. The last line says “System modifications completed.”

15 Scroll down to view the software release number. Verify that the expected release number is displayed.

If it is the expected release, go to ‘‘Install license and Avaya authentication files’’ on page 25.

If it is not the expected release, go to ‘‘Downloading License and Authentication Files’’ on page 16, then go to "Upgrading Software on an Initial Installation of an Avaya™ S8700 Media Server"**.** The upgrade process includes installing the license file.

Install license and Avaya authentication files

Installing the license and Avaya authentication files is a 2-step process:

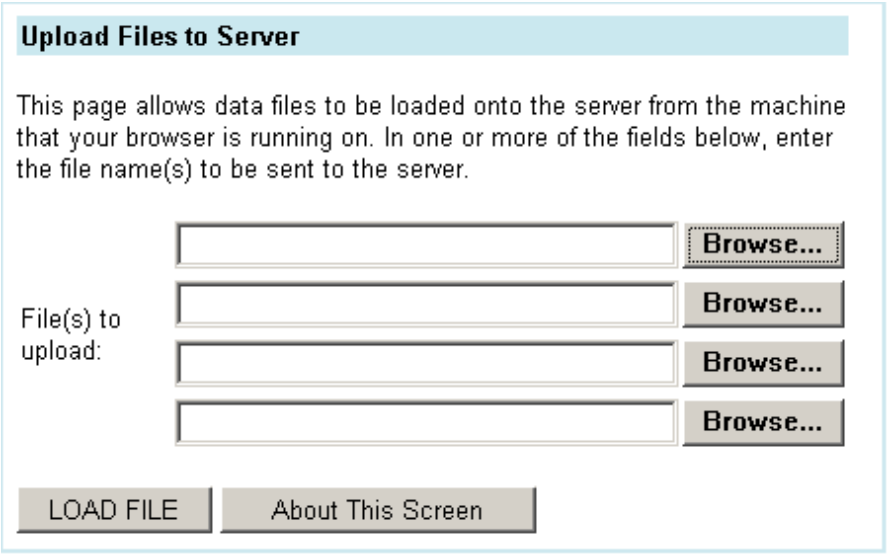
1 ‘‘Copy license and Avaya authentication files from laptop to Media Server 1’’ on page 25

2 ‘‘Install the license and Avaya authentication files’’ on page 26

Copy license and Avaya authentication files from laptop to Media Server 1

The following administration is done on the services laptop computer connected to media server 1 using the S8700 Media Server Web Interface. This procedure assumes that the license and authentication file are on the services laptop.

1 Click **Upload Files to Server (via browser)**.


Upload Files to Server
This page allows data files to be loaded onto the server from the machine that your browser is running on. In one or more of the fields below, enter the file name(s) to be sent to the server.
File(s) to upload:
Browse...
Browse...
Browse...
Browse...
LOAD FILE
About This Screen

2 Click **Browse** next to the top field to open the File Upload window on your computer. Find the license file that you need to upload to the media server.

3 Repeat step 2 for the second field to find the Avaya authentication file.

4 When all the files to be uploaded show in the fields, click **Load File** to upload all the files to the media server.

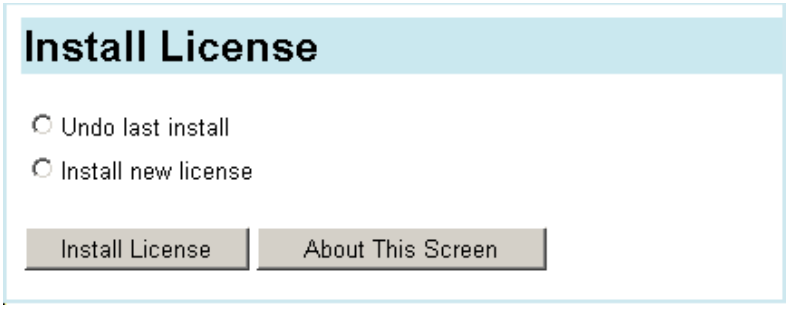
Once the license and Avaya authentication files are uploaded to the media server, you must install them.

Install the license and Avaya authentication files

CAUTION:
If you are doing an upgrade this procedure will be prompted for during the upgrade installation wizard. DO NOT install the license file using the following procedure if you are performing an upgrade or know that you are going to do an upgrade during the Media Server installation process.

The following administration is done on the services laptop computer connected to media server 1 using the S8700 Media Server Web Interface.

1 Click **Install License,** select “Install new license,” then click the Install License button to install the license files.



2 Installing the Avaya authentication file removes all default passwords and establishes new ones. After the installation, services logins specific to the media server are protected through Access Security Gateway (ASG).

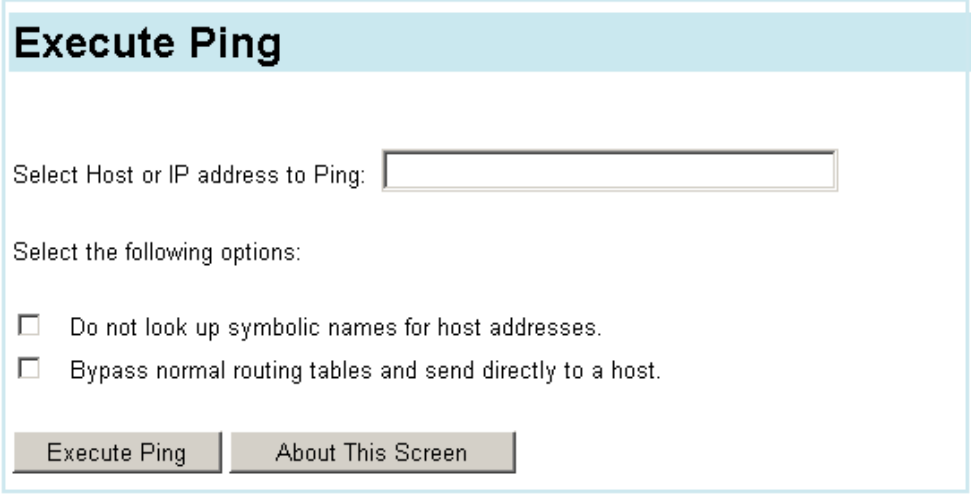
3 Click **Install Avaya Authentication** > **Install** to install the Avaya authentication file.

Verify media server 1 connection to customer’s LAN

The following administration is done on the services laptop computer connected to server 1 using the S8700 Media Server Web Interface. You also need a customer representative with knowledge of the customer’s LAN configuration and access to a desktop on the LAN.

1 Connect a customer-supplied CAT5 cable from server 1, port Eth4, to the customer’s LAN. Refer to *Getting Started with Avaya S8700 Media Server for Multi-Connect Configuration*. PDF

2 On the S8700 Media Server Web Interface click on **Execute Ping.**


Execute Ping
Select Host or IP address to Ping:
Select the following options:
Do not look up symbolic names for host addresses.
Bypass normal routing tables and send directly to a host.
Execute Ping
About This Screen

3 Have the customer enter a name, if DNS is administered, or IP address.

4 Verify that the ping executes successfully and a response is returned from the target host.

The following test is done from a customer desktop PC connected to the corporate LAN

1. Open a DOS command window (Start>Run>Command)
2. Ping the **Active Server** name, if DNS is administered, or IP address
3. Verify that the ping executes successfully and a response is returned from the active Media Server.
4. Ping **Server 1** name, if DNS is administered, or IP address
5. Verify that the ping executes successfully and a response is returned from server 1.

Test Media Server 1 LEDs

The following administration is done on the services laptop computer connected to media server 1 using the S8700 Media Server Web Interface.

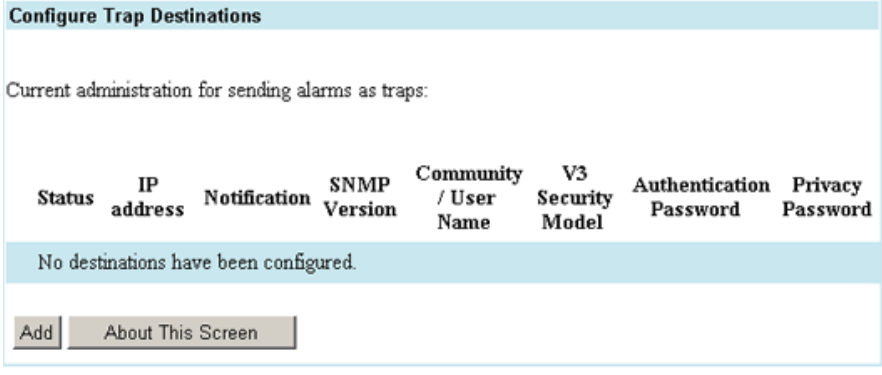
1. Click **Test Server LEDs** to test the media server LEDs.
2. Observe the Active/Standby and U2 LEDs on the media server (front of media server) and the transmit LED on the duplication card (back of media server) to ensure they are blinking.

Configure SNMP traps

The following administration is done on the computer used to access the Avaya S8700 Media Server using the S8700 Media Server Web Interface. Refer to the Pre-Installation Network Worksheet--S8700 Multi-Connect for host names, IP addresses, and community strings.

NOTE:
Configure trap destinations only if the customer's network administrator wants alarm notification.

1. Click **Configure Trap Destinations** to administer the simple network management protocol (SNMP).
2. Click **Add** to add new trap destinations and community strings.



Verify date and time

The following administration is done on the services laptop computer connected to media server 1 using the S8700 Media Server Web Interface.

1. Click **Set Server Time/Timezone** to view the current time, date, and time zone settings. If the time is within 3 minutes of the correct time, do nothing.
2. If it is not, then set the current time to the correct minute and click **Submit**.
3. Unplug the laptop from media server 1.

Connect duplication cables

Connect the crossover CAT5 cable and fiber optic cable between the media servers. Refer to *Getting Started with Avaya S8700 Media Server for Multi-Connect Configuration*. PDF for installation information.for a connectivity guide.

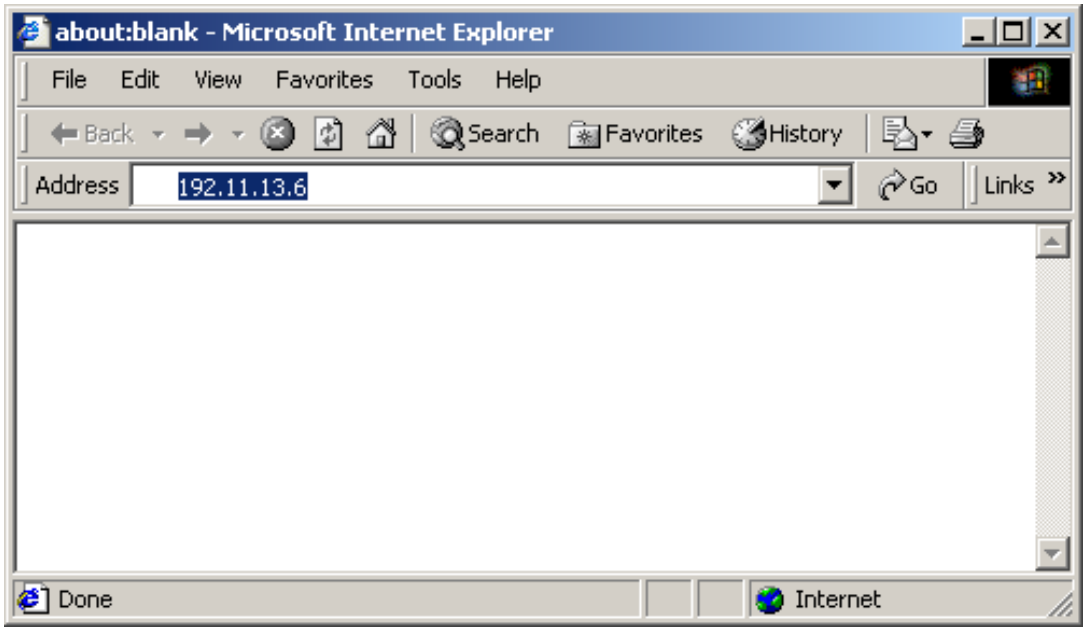
Configure Media Server 2

The following administration is done on the services laptop computer connected to server 2 using the S8700 Media Server Web Interface.

NOTE:
Make sure you have the complete list of IP addresses and host names before starting this process.

NOTE:
Make sure your networking and Web browser settings are correct. Refer to *Pre-Installation Information—S8700 Multi-Connect*. PDF

1. Plug server 2 into UPS 2 to power it up. Refer to *Getting Started with Avaya S8700 Media Server for Multi-Connect Configuration.* PDF
2. Connect the laptop to the dedicated services port on server 2 (usually port 2 (Eth1)).
3. Click **Start** > **Run** to open the Run dialog box.
4. Type **command** and press **Enter** to open a MSDOS Command Line window.
5. Type **arp -d 192.11.13.6** and press **Enter** to clear ARP cache in the laptop. This command will respond with one of the following:
   - The command line prompt when the cache has been cleared.
   - The phrase: The specified entry was not found. This is returned when the specified IP address does not currently contain an entry in the ARP cache.
6. Launch the Web browser.
7. Type **192.11.13.6** in the Location (Netscape) or Address (Internet Explorer) field to bring up the Web interface.



8 Log in as **craft**.

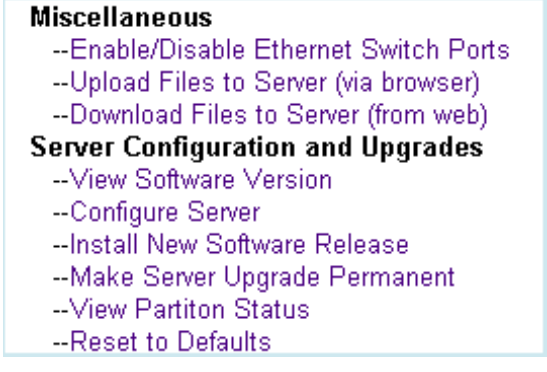
9 When asked “Do you want to suppress alarms?”, select “yes.”

NOTE:
The menu choices are in the left panel.

10 In the menu under Server select **Set Server Time/Timezone**

11 Set the correct time on Server 2

12 Scroll down the menu to Installation and Upgrades



NOTE:
For help with any of the web pages, click **About This Page** on the web page or **Help** at the top of the main menu.

13 Click **Configure Server** to open the first page of the Configure Server wizard.

14 Select Avaya S8700 Media Server for Multi-Connect Configuration and click **Continue**.

15 Click through the Review Notices to get to the Set Server Identities page .

NOTE:
Most of the fields are populated with default settings. Do not change the defaults unless the customer requests it (refer to the filled-out Job Aid entitled *Pre-Installation Network Worksheet—S8700 Multi-Connect*).

16 Fill in the fields on the Set Server Identities and the subsequent pages:

- Configure Ethernet Interfaces
- Configure Switches
- Set DNS/DHCP
- Configure Time Server
- Set Modem Interface
- Update System

NOTE:
The server is not configured until you click Continue on the Update System page.

17 When you complete all the fields, the Update System screen displays each configuration task as it completes it. The last line says “System modifications completed.”

18 Scroll down to view the software release number.

If the software release is the expected release, go to “Verify media server 2 connection to customer’s LAN’’ on page 31.

If it is not the expected release, go to Upgrading Software on an Initial Installation of an Avaya™ S8700 Media Server.

Verify media server 2 connection to customer’s LAN

The following administration is done on the services laptop computer connected to media server 2 using the S8700 Media Server Web Interface. You also need a customer representative with knowledge of the customer’s LAN configuration and access to a desktop on the non-dedicated network.

1 Connect a customer-supplied CAT5 cable from media server 2, port Eth4, to the customer’s LAN. Refer to *Getting Started with Avaya S8700 Media Server for Multi-Connect Configuration*. PDF

2 On the S8700 Media Server Web Interface click on **Execute Ping**

3 Have the customer enter a name, if DNS is administered, or IP address.

4 Verify that the ping executes successfully and a response is returned from the target host.

The following test is done from a customer desktop PC connected to the corporate LAN

1. Open a DOS command window (Start>Run>Command)
2. Ping the **Active Server** name, if DNS is administered, or IP address
3. Verify that the ping is executes successfully and a response is returned from the active Media Server.

Test media server 2 LEDs

The following administration is done on the services laptop computer connected to media server 2 using the S8700 Media Server Web Interface.

1. Click **Test Server LEDs** to test the server LEDs.
2. Observe the Active/Standby and U2 LEDs on the media server (front of media server) and the transmit LED on the duplication card (back of media server) to ensure they are blinking.

Busy out standby media server

The following administration is done on the services laptop computer connected to media server 2 using the S8700 Media Server Web Interface.

This action will prevent unexpected interchanges during the remainder of the installation.

1. Click **Busy Out Server** under the Server heading of the main menu.
2. Click on **Busy Out.**
3. Click **View Summary Status** and verify that media server 2 is busied out.

Connect UPS cables to Ethernet Switch(es)

Connect the CAT5 straight-through cables from the UPS SNMP module to the Ethernet switch. Refer to *Getting Started with Avaya S8700 Media Server for Multi-Connect Configuration*. PDF for a connectivity guide.

Configure the UPSs

NOTE:
The following procedure is specific to the Powerware 9125 equipped with a Connectups SNMP Module. If a different UPS is used refer to it's accompanying documentation to set the IP Address/Subnet mask, trap receiver IP address, and community strings.

The SNMP module in the UPS must be administered so it can report alarm conditions to the appropriate server. The module will report the loss of commercial power and/or the depletion of battery resources. Each UPS requires a unique IP address, which can be the Avaya-provided default one or a customer-provided one. Refer to the filled out job aid entitled *Pre-Installation Network Worksheet—S8700 Multi-Connect.*

NOTE:
In order for the UPS to properly report alarm conditions the IP addresses for the UPS must be configured in the S8700 Media Servers.

- 2 IP addresses (1 for each UPS)
- 1 Default gateway IP address
- Subnet mask
- Community name strings (get, set, trap)

SECURITY ALERT

The **Get** and **Set**, community names are generally configured with default values of **Public** and **Private** respectively. If required, the local network administrator must supply values for their Network Management System. **This is a security issue.** For example, the default Set community name of Private, with it's widely known password could be used to shutdown power to the UPS loads via SNMP message.

Refer to the configuration section of the user guide that comes with the UPS for the default user ID and password and the administration commands. Use the following general procedures to administer the UPSs:

NOTE:
These steps are specifically for the Powerware 9125 UPS equipped with a ConnectUPS MX SNMP module. These steps use the default addresses and subnet masks for the S8700 Media Server for Multi-Connect Configuration. If other addresses are to be used they must be substituted when performing these steps. Refer to the Pre-Installation Network Worksheet--S8700 Multi-Connect for the proper data.

1. Connect the services laptop computer (RS-232 serial port) to the DB-9 connector on the back of the ConnectUPS MX module for UPS A. Use a DB-9 to DB-9 serial cable. (Supplied with the ConnectUPS ^{TM} MX SNMP Module.)
2. Open a terminal emulation program (such as HyperTerminal) on the services laptop.

3 Administer the emulation program port settings:

- 9600 baud rate
- No parity
- 8 bits
- 1 stop bit

4 Press **Enter.** The Main Configuration screen appears. If the Main Configuration screen does not appear, Press **Enter.** again.

5 Type **BR 0** and press **Enter.** (Sets the BOOTP retry counter to zero.)

6 Type **IP 198.152.254.239** and press **Enter.** (Default IP Address for this UPS)

7 Type **NM 255.255.255.0** and press **Enter.** (Default subnet mask for this UPS)

8 Type **GW 198.152.254.201** and press **Enter.** (Default gateway for this UPS)

9 If supplied enter the Get and Set community names with the following commands:

NOTE:
If the UPS units are going to be monitored by a Network Management System (NMS) coordinate the assignment of the community names with the local LAN administrator. See the Pre-Installation Network Worksheet for S8700 Multi-Connect. If a NMS will not monitor the UPS units set the community names to unique string values.

- Type **CG name** and press **Enter.** (Enters the Get community name. Type up to 16 alphanumeric characters for the name. The name field is case sensitive and cannot contain blanks.)
- Type **CS name** and press **Enter.** (Enters the Set community name. Type up to 16 alphanumeric characters for the name. The name field is case sensitive and cannot contain blanks.)

10 Type **HS** and press **Enter.** (Displays the Host Table)

NOTE:
The Host Table should be empty. If not, in the following commands use a host table entry that is currently unassigned.

11 Type **HI1 aaa.bbb.ccc.ddd** and press **Enter.** (Sets the trap destination for this UPS).

12 Type **TL1 3** and press **Enter.** (Sets the trap level for the host, All traps)

13 Type **TT1 1**and press **Enter.** (Sets the trap type, Standard UPS MIB-defined)

14 Type **HS** and press **Enter.** Verify the table entries. (re-displays the host table)

15 Type **CF** and press **Enter.** (re-displays the basic administration screen)

16 Type **SA** and press **Enter.** (Saves configuration and restarts module)

17 When completed, disconnect the services laptop computer from the UPS.

18 Connect a CAT5 cable to the RJ45 connector on the UPS SNMP module and to the next available port on the Cajun Ethernet switch for Control Network A.

19 Repeat steps 5 through 18 for the second UPS, *except* connect the SNMP module to the Ethernet switch for Control Network B. Use the following address and netmask information:

- UPS IPaddress / Subnet mask = **198.152.255.239 / 255.255.255.0**
- Default Gateway IP address = **198.152.255.202**
- Host Table trap receiver IP address = **198.152.255.202**
- Local network administrator supplied information as required.

Configure the Ethernet Switch(es)

The SNMP subagent in the Ethernet switch must be administered so it can report alarms to the appropriate server when the hardware experiences problems. Refer to the Job Aids for Avaya S8700 Media Server for Multi-Connect Configuration for the proper addresses and community strings. At a minimum, the following items need to be configured:

- IP address (1 for each equipped Ethernet switch)
- Subnet mask
- Community string (get, set, trap)

Refer to the configuration section of the user guide that comes with the Ethernet switch for the default user ID, password and configuration commands. Use the following general procedures to administer the Ethernet switch(es):

1 Plug the Ethernet switch into the UPS.
   - Duplex reliability—Ethernet switch A into UPS A
   - High or critical reliability—Ethernet switch A into UPS A and Ethernet switch B into UPS B.

2 Connect the services laptop computer (RS-232 serial port) to the port labeled Console on the front of the Ethernet switch using the cable supplied with the Ethernet switch.

3 Open a terminal emulation program (such as HyperTerminal).

4 Administer the terminal emulation port settings:
   - 9600 baud rate
   - No parity
   - 8 bits
   - 1 stop bit

5 Login to the Ethernet switch with the appropriate login and password. Refer the user guide supplied with the Ethernet switch.

6 Using the Command Line Interface (CLI) of the Ethernet switch set the following parameters:
   - IP address and subnet mask of the Ethernet switch.
   - IP address of the Trap Receiver
   - SNMP community string for Get, Set, and Trap.

SECURITY ALERT

The **Get** and **Set**, community names are generally configured with default values of **Public** and **Private** respectively. If required, the local network administrator must supply values for their Network Management System. **This is a security issue.** For example, the default Set community name of Private, with it's widely known password could be used to shutdown or reconfigure the Ethernet switch via a SNMP message.

1. When prompted to save configuration type **Y.**
2. When completed, disconnect the services laptop computer from the Ethernet switch.
3. If high or critical reliability, repeat steps 1 through 8 for Ethernet switch B. Refer to the Job Aids for Avaya S8700 Media Server for Multi-Connect Configuration for the proper addresses and community strings.

Customize the Active Media Server

Set up Avaya Site Administration - Dedicated Services port

The following administration is done on the services laptop computer connected to the S8700 Media Server via the dedicated services port (default port 2 Eth1).

NOTE:
The following procedure establishes a S8700 Multi-Connect configuration record for use when connected to the dedicated Avaya Services port. If this configuration record already exists (from a previous installation) this procedure is not required.

NOTE:
At a minimum, **Avaya Site Administration 1.11** should be used to work properly with the Avaya 8700 media server and the Avaya MultiVantage software.

1. Plug the services laptop into the dedicated services port (default 2 Eth1) on the back of media server 1, the active media server.
2. On the laptop launch Avaya Site Administration
3. Click on File.
4. Click on New.
5. Click on Switch.
6. Follow the Add Switch wizard to build a configuration record for the current customer.
    - Give the switch record a name that indicates it will work with all Avaya S8700 media servers, i.e. S8700-Service-Port
    - Select Network Connection as the connection method
        - Use IP address **192.11.13.6**
        - Use port **5023**
7. When the switch record is established test by connecting to the media server.

Set up Avaya Site Administration - Active Media Server

The following administration is done on the services laptop computer connected to the non-dedicated network (customer LAN). The ASA switch record to connect to the active media server will be unique for each customer.

NOTE:
At a minimum, **Avaya Site Administration 1.11** should be used to work properly with the Avaya 8700 media server and the Avaya MultiVantage software.

1. Plug the services laptop into a port on the customer's LAN.
2. On the laptop launch Avaya Site Administration
3. Click on File.
4. Click on New.
5. Click on Switch.
6. Follow the Add Switch wizard to build a configuration record for the current customer.
    - Give the switch record a unique name
    - Select Network Connection as the connection method
        - Use the **active server** IP address
        - Use port **5023**
7. When the switch record is established connect the laptop to the customer's LAN and test by connecting to the active media server.

Input translations

Contact the installation personnel responsible for translation input to download translations. If the translations are not ready, you may continue with the process, entering minimal translations to verify connectivity to the port networks.

Reset MultiVantage(TM) software

NOTE:
Do not reset the MultiVantage software if no translations were input.

The following administration is done on a computer used to access the Avaya S8700 Media Server using Avaya Site Administration.

1. If not already open, launch Avaya Site Administration.
2. Log into media server 1 (the active server) as **craft**.
3. Establish a SAT Emulation session.
4. Type **reset system 4** and press **Enter** to get Avaya MultiVantage(TM) software to read the copied translations.

Add Media Gateways

NOTE:
Do this procedure only if the translations were not input earlier.

The following administration is done on a computer used to access the Avaya S8700 Media Server using Avaya Site Administration.

1. Type **add cabinet *number*** (2 through 44) and press **Enter** for each equipped Media Gateway.
2. Fill in the equipped carrier types for the Media Gateway.

Administer and Enable IPSI(s)

CAUTION:
The following procedure must be executed on all configurations. This includes configurations that are translated using a bulk provisioning tool such as Avaya Site Administration or ProVision. When Avaya MultiVantage™ software is first initialized it **does not know** the primary and secondary control subnet addresses. Submitting the following form will cause the Avaya MultiVantage™ software to read this information from the media server and update itself correctly.

1. Type **change system-parameters ipserver-interface** and press **Enter.**

```
change system-parameters ipserver-interface                    Page   1 of   1

                 IP SERVER INTERFACE (IPSI) SYSTEM PARAMETERS

SERVER INFORMATION

                IPSI Host Name Prefix: vodka
      Primary Control Subnet Address: 198.152.254.  0 *
    Secondary Control Subnet Address: 198.152.255.  0 *

OPTIONS

                    Switch Identifier: A
   IPSI Control of Port Networks: disabled
```

2. Verify that the Primary and Secondary (if equipped) Subnet Addresses are correct. The subnet in these fields should match the most significant 3 octets of the ***Server IP address on control network*** entry from the Pre-Installation Network Worksheet. If there is an Asterisk (*****) to the right of the Subnet Address fields it means that the Avaya MultiVantage call processing software does not contain the subnet information displayed. After verifying the displayed information, submitting this form will cause the Avaya MultiVantage software to be updated with the subnet information displayed.

CAUTION:

*If the information displayed in the Primary and Secondary Subnet Address fields is not correct it must be changed on the servers. Use the **Configure Server** entry on the S8700 Media Server Web Interface to change the server configuration. Then return here to perform this step.*

3 Verify that the Switch Identifier is set correctly for this installation. It is critical that the correct Switch Identifier is entered here before TN2312 IPSI circuit packs are administered in the next procedure.

4 Press **Enter** to submit the form.

Add IPSI translations to MultiVantage™ software

NOTE:

Adding IPSI translations is only required if bulk translations, including the IPSI translations, were not entered earlier. However, it is recommended that connectivity to the IPSIs be tested no matter how the translations were entered. See "Test Connectivity to IPserver interface circuit packs'' on page 40

1 Type **add ipserver-interface <Port Network>**

```
add ipserver-interface 8                                        Page   1 of   1
          IP SERVER INTERFACE (IPSI) ADMINISTRATION - PORT NETWORK 8



 Primary IPSI                                       QoS Parameters
 ------------                                       --------------
  Location:  8AXX                                     Call Control 802.1p: 6
      Host: ipsi-A08a                               Call Control DiffServ: 46
   DHCP ID: ipsi-A08a


 Secondary IPSI
 --------------
  Location:  8B01
      Host: ipsi-A08b
   DHCP ID: ipsi-A08b
```

2 Verify that the fields associated with the Primary and Secondary (if equipped) are populated with default data. The Host and DHCP ID fields are set by the DHCP server.

3 Press **Enter** to submit the form.

Repeat the **add ipserver-interface <Port Network>** for each IPSI controlled Port Network.

Test Connectivity to IPserver interface circuit packs

The following procedure is performed from both ASA and the S8700 Media Server Web Interface while connected to the **active** media server.

1. From ASA type **list ipserver-interface** and press **Enter**
   - Verify that all ISPI circuit packs are translated.
2. From the S8700 Media Server Web Interface under **Diagnostics** click on **Execute Pingall.** Select **Other Server(s), All IPSIs, Ethernet switches** and click on **Execute Pingall.**
   - Verify that all endpoints respond correctly.

Verify IPSI circuit pack version

1. From the S8700 Media Server Web Interface under **Installation and Upgrades** click on **View IPSI Version**. Select **Query All** and click on the button **View IPSI Version**.
   - Verify the firmware release for each TN2312AP IPSI. If upgrade is required go to "Upgrading the Avaya S8700 Media Server Configurations"

Enable control of IPserver interfaces

NOTE:
The next procedure will enable the IPSI circuit packs and allow them to control the port networks.

1. Type **change system-parameters ipserver-interface** and press **Enter**.

```
change system-parameters ipserver-interface                    Page   1 of   1

                IP SERVER INTERFACE (IPSI) SYSTEM PARAMETERS

SERVER INFORMATION

               IPSI Host Name Prefix: vodka
      Primary Control Subnet Address: 198.152.254.  0
    Secondary Control Subnet Address: 198.152.255.  0

OPTIONS

                    Switch Identifier: A
   IPSI Control of Port Networks: enabled
```

2. Set the **IPSI Control of Port Networks** field to: **enabled**
3. Press **Enter** to effect the change.

Install the Media Gateways

Floor plans and equipment layouts for typical S8700 Multi-Connect configuration installations are provided in Designing the Avaya S8700 Media Server for Multi-Connect Configuration.

Media gateways are typically installed in the same equipment room as the Avaya S8700 Media Server rack hardware; however, the media gateways can be installed in another location, including another state or country. A media gateway may contain from 1 to 5 port networks (PNs).

NOTE:
Before you begin the media gateway installation, check the location of the AC/DC power receptacles. The receptacles must be on separately fused circuits not controlled by wall switches. They must be located within 10 feet (3 meters) of the gateway and outside the Main Distribution Frame (MDF) area.

This section covers the following procedures:

- ‘‘Installing an Avaya MCC1 Media Gateway’’ on page 42
- ‘‘Installing an Avaya SCC1 Media Gateway Stack’’ on page 77
- ‘‘Installing an Avaya G700 Media Gateway’’ on page 106

Installing an Avaya MCC1 Media Gateway

This section describes how to install Avaya MCC1 Media Gateways.

Typical Avaya MCC1 Media Gateway on page 42 shows a typical Avaya MCC1 Media Gateway.

Typical Avaya MCC1 Media Gateway

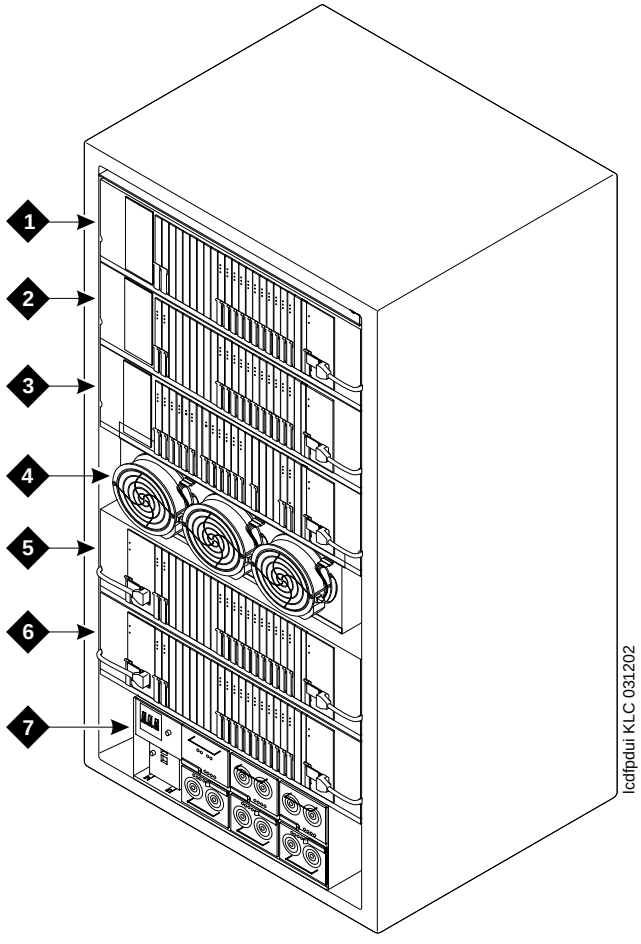


Figure notes

1 Port Carrier C

2 Port Carrier B

3 Expansion Control Carrier A

4 Fans

5 Port Carrier D

6 Port Carrier E

7 Global Power Supply

Perform these tasks before you begin the installation:

- “Unpack and Inspect Media Gateway” on page 44
- “Unpack and Inspect Auxiliary Cabinet” on page 44
- “Unpack and Inspect Stratum 3 Clock Cabinet” on page 107
- “Check Circuit Packs” on page 45
- “Correct Shipping Errors” on page 45

Perform these tasks to install the media gateways:

- “Position the Media Gateway” on page 45
- “Position the Auxiliary Cabinet (Optional)” on page 46 and “Install Auxiliary Cabinet Equipment” on page 46
- “Install Earthquake Protection for Media Gateway” on page 46, if required

WARNING:
If the approved ground or approved floor ground can only be accessed inside a dedicated power equipment room, then connections to this ground should be made by a licensed electrician. See Approved Grounds. PDF for more information.

- “Connect AC Power and Ground” on page 49 or “Connect DC Power and Ground” on page 59
- “Connect Remote Power Off Cable” on page 69
- “Connect External Alarm Cable” on page 71
- Interconnect cabling between port networks
  - — Direct connect to rack hardware
  - — Direct connect to each port network (duplex and high/critical)
  - — Switch-connect to port networks (duplex and high/critical)

1. Check the customer’s order and the shipping packing lists to confirm all equipment is present.
2. Check the S8700 Multi-Connect configuration adjuncts for damage and report all damage according to local shipping instructions.
3. If any equipment is missing, report the information to your Avaya representative.

Unpack and Inspect Media Gateway

CAUTION:
A media gateway may weigh as much as 800 lb. (363 kg) and may be top heavy. Use extreme caution.

1 Check the status of the SHOCKWATCH and/or TILTWATCH indicators on the container. If the container has been shaken or tilted beyond specifications, the indicators are red, indicating potential damage. Report any damage according to local shipping instructions.

DANGER:
Take care to avoid injury while cutting and removing the 2 metal bands.

2 Unpack the media gateway and remove all packing material.

3 Move the media gateway into its proper position.

4 Do not adjust the leveling feet at this time.

Unpack and Inspect Auxiliary Cabinet

The auxiliary cabinet can be positioned adjacent to the control hardware in the rack or any media gateway.

1 Check the status of the SHOCKWATCH and/or TILTWATCH indicators on the container. If the container has been shaken or tilted beyond specifications, the indicators are red, indicating potential damage. Report any damage according to local shipping instructions.

DANGER:
Take care to avoid injury while cutting and removing the 2 metal bands.

2 Unpack the cabinet and remove all packing material.

3 Move the cabinet into its proper position.

4 Remove the lower rear panel from the auxiliary cabinet.

NOTE:
You reinstall the lower rear panel when the installation is completed.

Check Circuit Packs

1. Ensure all circuit packs are fully inserted into the proper slots according to the System Diagram shipped with the S8700 Multi-Connect configuration.

   Report any discrepancies in circuit pack type or quantity to your Avaya representative. For detailed circuit pack descriptions, refer to Designing the Avaya S8700 Media Gateway for Multi-Connect Configuration.

2. Check the S8700 Multi-Connect configuration adjuncts for damage and report all damage according to local shipping instructions.

Correct Shipping Errors

1. Red-tag all defective and over-shipped equipment and return to the nearest Material Stocking Location (MSL).
2. To contact the Avaya Order Exception group in the United States, call 1-800-772-5409. For international customers, contact your order service agent.
3. Direct all short-shipped reports to the nearest MSL.
4. Contact the appropriate location for specific instructions.

Position the Media Gateway

Each media gateway is normally positioned adjacent to the control hardware in the rack or another media gateway.

NOTE:
Typically, the center stage switch is collocated with a port network (PN). It is not required to be located in port network 1.

1. If the S8700 Multi-Connect configuration is supplied with cable ductwork, space the media gateways on 32 in. (81.3 cm) centers +-1/8 in. (0.3 cm). They must be level and must be square with respect to each other.
2. If the S8700 Multi-Connect configuration is supplied with cable slack managers, place the media gateways far enough from the connection field to lay down the 32 in. (81.3 cm) slack managers and to provide a little extra room for the cables to access the cable slack managers.
3. If earthquake protection is required, ‘‘Install Earthquake Protection for Media Gateway’’ on page 46.
4. If earthquake protection is not required, level the media gateways and adjust and lock the media gateway stabilizing bolts to keep it from moving.
5. At the bottom of the media gateway, install the hole plugs provided in the holes previously occupied by the 4 carriage bolts.

Position the Auxiliary Cabinet (Optional)

1. Position the auxiliary cabinet next to the control hardware in the rack (or a media gateway). The location of equipment inside the auxiliary cabinet is specified in the Customer Service Document (CSD).
2. If earthquake protection is required, refer to ‘‘Install Earthquake Protection for Media Gateway’’ on page 46.
3. If earthquake protection is not required, level the auxiliary cabinet and adjust and lock its stabilizing bolts to keep it from moving.

Install Auxiliary Cabinet Equipment

The auxiliary cabinet allows for carrier, 23-in. (58.4 cm) rack, or panel mounting of the hardware. The following equipment is furnished with the media gateway:

- Fuse panel — Distributes -48 VDC power to fused cabinet circuits
- Power receptacle strip — Provides switched and un-switched 120 VAC receptacles
- DC connector block — Required when the auxiliary cabinet is powered by an external DC source
- AC to DC power supply — Converts AC power provided by the AC power strip switched outlet to the required DC voltage.

Install equipment inside the media gateway as specified in the CSD. The following optional equipment can be installed:

- 909A/B Universal Coupler
- Fan Assembly — Requires 120 VAC power
- External Channel Service Unit (CSU) — 1 is required for each T1 carrier link
- PagePac Paging System — 3 models are available. All PagePac models require 120 VAC power.
- External system announcement units -- may be powered by either -48V DC or 120 VAC.

Install Earthquake Protection for Media Gateway

Use the correct procedure for your installation:

- ‘‘Install Concrete Floor Mounting’’ on page 47
- ‘‘Install Raised Computer Floor Mounting’’ on page 47

Install Concrete Floor Mounting

1. Position the media gateway in the exact position it is to occupy when the installation is complete.
2. Insert a pencil or marker through the holes previously occupied by the carriage bolts (front and rear) in the bottom of the media gateway and mark the floor directly beneath each hole.
3. Roll the media gateway out of the way and drill four 1/2-in. (1.27 cm) diameter holes about 1.5 in. (3.8 cm) deep at the locations marked in Step 2.
4. Insert concrete floor anchors (STARR part number 3425) into the holes.
5. Roll the media gateway back into place and align the media gateway holes over the concrete floor anchors. Adjust the leveling legs until the media gateway is level. See ‘‘Earthquake Mounting — Raised Computer Floor’’ on page 49.

NOTE:
If the S8700 Multi-Connect configuration is supplied with cable ductwork, the media gateways must be level from front to rear and from side to side. They must be square with respect to each other to within ±1/8-in. (0.3 cm).

6. Secure the media gateway to the floor with the 4 supplied 3/8-16 x 4.5-in. (11.4 cm) bolts and four 3/8-in. flat washers.
7. Repeat this procedure for each media gateway to be installed.

Install Raised Computer Floor Mounting

1. Position the media gateway in the exact position it is to occupy when the installation is complete.
2. Insert a pencil or marker through the holes previously occupied by the carriage bolts (front and rear) in the bottom of the media gateways and mark the raised floor panels directly beneath each hole.
3. Roll the media gateway out of the way and drill 4 holes 5/8-in. (1.6 cm) in diameter through the raised floor panels marked in Step 2.

CAUTION:
Take care while drilling the holes through the raised floor that the drill bit does not penetrate any cables below the floor that could cause damage to the cable or injury to the installer.

4. Insert a long punch through the holes drilled in Step 3 and mark the concrete floor beneath the raised floor panels.
5. Remove the raised floor panels in which the holes were drilled.
6. Using 1/2-in. (1.3 cm) anchor bits, drill a hole at each of the locations marked in Step 4. Stop drilling when the mark on the side of the bit reaches the floor level.

7 Insert a concrete floor anchor (STARR part number 3425) into the hole until the mark on the bit reaches floor level again. Snap the top of the anchor bit off. Repeat for the remaining holes.

8 A 3/8-16 threaded rod (part number 845557073) is used to secure the media gateway to each concrete floor anchor. See ‘‘Earthquake Mounting — Raised Computer Floor’’ on page 49.

Measure the distance from 1 of the anchors to the bottom of the media gateway. Add 1/2-in. (1.3 cm) to this measurement to allow the rod to be threaded into the floor anchor. Add an additional 1/2-in. (1.3 cm) to allow the rod to protrude up through the bottom of the media gateway. For example: if the distance from the floor anchor to the bottom of the media gateway is 10 in. (25 cm), cut the threaded rod 11 in. (27.9 cm) long.

9 When all 4 threaded rods are cut, replace the raised floor panels removed in Step 5.

10 Position the media gateway over the holes and adjust the leveling legs until the media gateway is level.

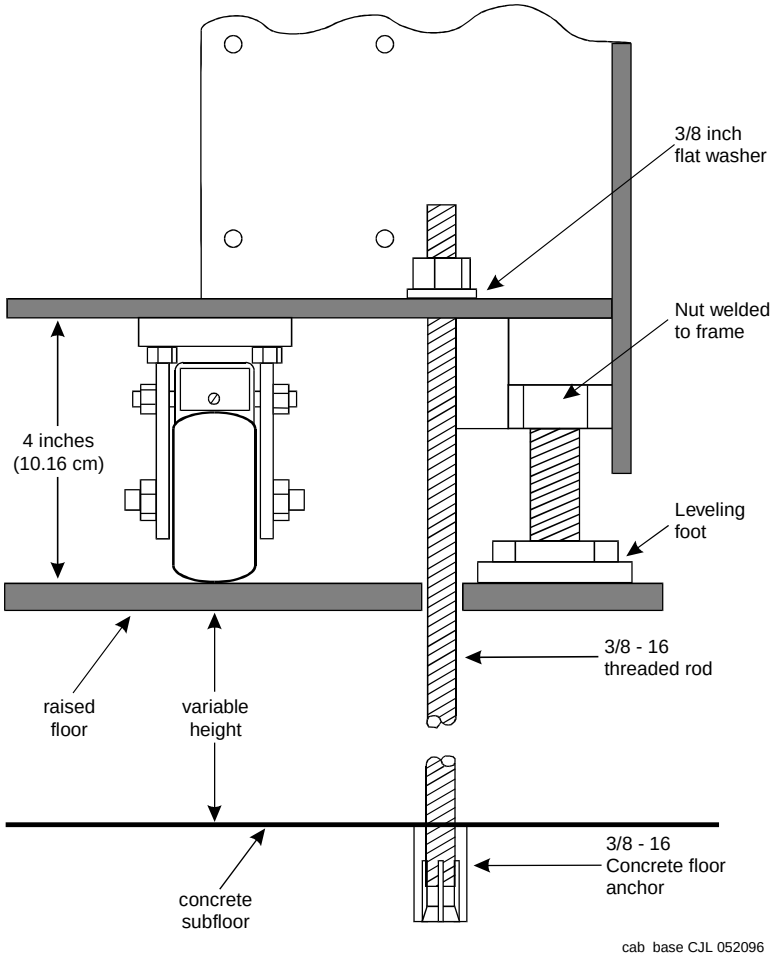
NOTE:
If the S8700 Multi-Connect configuration is supplied with cable ductwork, the media gateways must be level from front to rear and from side to side. They must be square with respect to each other to within +-1/8-in. (0.3 cm).

11 Insert the threaded rods through the media gateway bottom and thread into the concrete floor anchors.

12 Place a 3/8-in. flat washer onto each rod. Thread a 3/8-16 hex nut onto each rod and tighten securely.

13 Repeat this procedure for each media gateway to be installed (including the auxiliary cabinet, if required).

Earthquake Mounting — Raised Computer Floor



Connect AC Power and Ground

CAUTION:

The equipment room AC power and ground wiring must be performed by a qualified electrician. Refer to Designing *the Avaya S8700 Media Gateway Multi-Connect Configuration* for site requirement information.

CAUTION:

The power circuit must be dedicated to the S8700 Multi-Connect configuration and must not be shared with other equipment and must not be controlled by a wall switch. The AC receptacle should not be located under the MDF.

CAUTION:

S8700 Multi-Connect configuration grounding must comply with the general rules for grounding contained in Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country containing the equipment. For more information, refer to Approved Grounds. PDF

For information about connecting AC power and ground, see:

- “Power Requirements” on page 50
- “Power Supply Sources (J58890CE-1, J58890CE-2, and J58890CH-1)” on page 50
- “Grounding an AC-Powered Media Gateway (J58890CE)” on page 51
- “Connect Mixed AC/DC Power and Ground” on page 67

Task List: Connect AC power and ground

Perform these tasks to connect AC power and ground:

1. “Ground AC Load Center 50 ft. (15.2 m) or Less from Media Gateway” on page 52 or “Ground AC Load Center More Than 50 ft. (15.2 m) from Media Gateway” on page 53
2. “Connect Battery Leads (J58890CH-1)” on page 55
3. “Connect Small Battery Holdover” on page 56 or “Connect Large Battery Holdover” on page 57
4. “Connect Shorting Cable to J58890CE-2” on page 58
5. “Connect AC Power” on page 59

Power Requirements

s8700 Multi-Connect configuration Power Requirements Maximum DEFINITY UL Rating Label Power Capacity			
	Iac In	Max W In	BTU/Hr.
208	24	3245	11071.26
240	21	3276	11177.71
120	40	3120	10645.44

Power Supply Sources (J58890CE-1, J58890CE-2, and J58890CH-1)

The connect AC power and ground procedures apply to the AC-powered media gateways.

Any of these power sources can supply 60 Hz power to the AC load:

- Single-phase, 4-wire, 120/240 VAC supplying 240 VAC.This source has 2 hot wires, 1 ground wire, and 1 neutral wire (J58890CE).
- Single-phase, 4-wire, 120/208 VAC supplying 208 VAC. This source has 2 hot wires, 1 ground wire, and 1 neutral wire (J58890CE).
- Single-phase, 3-wire, 208 or 240 VAC. This source has 2 hot wires and 1 ground wire (J58890CH).

Either of these power sources can supply 50 Hz power to the AC load:

- Non-US 5-wire, Y, 220/380 VAC. This source has 3 hot wires, 1 neutral wire, and 1 ground wire.
- Non-US Delta, 4-wire, 220 or 240 VAC. This source has 3 hot wires and 1 ground wire.[1]

AC Power Sources and Plug Type

Power Distribution Unit	Power Sources	Power Input
AC power distribution (J58890CE-1 and J58890CE-2) media gateway	Single-phase 120 VAC with neutral	120 VAC, 60 Hz NEMA 5-50R
	Single-phase 240 VAC with neutral, or single phase of 3-phase, 208 VAC with neutral	208-240 VAC, 60 Hz NEMA L14-30R
AC power distribution (J58890CH-1) media gateway	Single-phase 176-264 VAC	200-240 Volts, 50-60 Hz NEMA L6-30R. Installations outside the United States require a receptacle suitable for use in the country of installation.

NOTE:
The type of power required is shown on the media gateway's rear door.

Grounding an AC-Powered Media Gateway (J58890CE)

Grounding is relatively simple for an AC-powered media gateway. Basically, the media gateways connect to the single-point ground terminal block located at either the AC load center or to a separate single-point ground block wired to the AC load center (or optional AC protector media gateway).

- The approved ground wire must be a green (or green with yellow stripe), 6 AWG (#40) (16 mm^2), copper, stranded wire.
- Bond all approved grounds at the single-point ground to form a single grounding electrode system.

1. Describes the power sources and required AC input power.

Ground AC Load Center 50 ft. (15.2 m) or Less from Media Gateway

1. At the bottom rear of the first media gateway, connect a 6 AWG (#40) (16 mm^2) media gateway GROUND wire to the media gateway ground terminal block. See ‘‘Typical Media Gateway Ground Location’’ on page 53.
2. Route the media gateway GROUND wire to the single-point ground block at the AC load center and connect.
3. At the bottom rear of the next media gateway (if provided), connect a 6 AWG (#40) (16 mm^2) media gateway GROUND wire to the media gateway ground terminal block.
4. Route the media gateway GROUND wire to the single-point ground block at the AC load center and connect.

NOTE:
If the media gateway is located remotely (in a separate room or building), connect the media gateway GROUND wire to an approved ground.

5. Repeat connecting each media gateway to the single-point ground block.
6. At the AC load center, connect a 10 AWG (#25) (6 mm^2) wire to the single-point ground block. This ground wire will later be tie-wrapped to the trunk cables and connected to the Coupled Bonding Conductor (CBC) ground block at the MDF.

   The Coupled Bonding Conductor (CBC) wires are installed and terminated in ‘‘Cabling Port Networks’’ on page 116.

Typical Media Gateway Ground Location

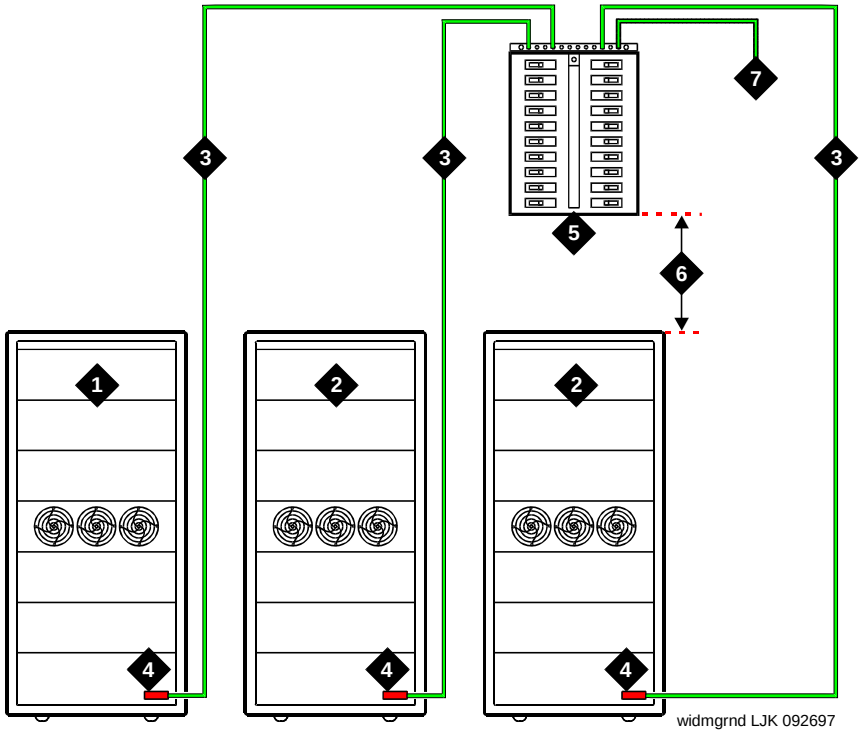


Figure notes

1. First Media Gateway
2. Additional Media Gateways (if installed)
3. 6 AWG (#40) (16 mm^2) Media Gateway GROUND Wire
4. Media Gateway Ground Terminal Block
5. AC Load Center Single-Point Ground
6. Less than 50 Wire feet (15.2 m)
7. 10 AWG (#25) (6 mm^2) Ground Wire to CBC

Ground AC Load Center More Than 50 ft. (15.2 m) from Media Gateway

1. Mount the single-point ground block to any surface between the media gateways and the AC load center single-point ground. The single-point ground block must be mounted to a non-metallic surface.
2. At the bottom rear of the first media gateway, connect a 6 AWG (#40) (16 mm^2) media gateway GROUND wire to the media gateway ground block. See ‘‘Typical Media Gateway Grounding Wiring Diagram’’ on page 54.
3. Route the opposite end of the wire to the single-point ground block and connect.
4. At the next (if provided) DC Power media gateway, connect a 6 AWG (#40) (16 4 mm^2) media gateway GROUND wire to the media gateway ground terminal block GROUND DISCHARGE bar.

5 Route the media gateway GROUND wire to first media gateway and connect to the single-point ground block and connect block.

NOTE:
If a media gateway is located remotely (in a separate room or building), route the media gateway media gateway GROUND wire to an approved protective ground.

6 Repeat connecting each media gateway to the single-point ground block.

7 Connect a 6 AWG (#40) (16 mm^2) ground wire to an unused terminal on the single-point ground block.

8 Route the ground wire to the AC load center ground and connect.

Typical Media Gateway Grounding Wiring Diagram

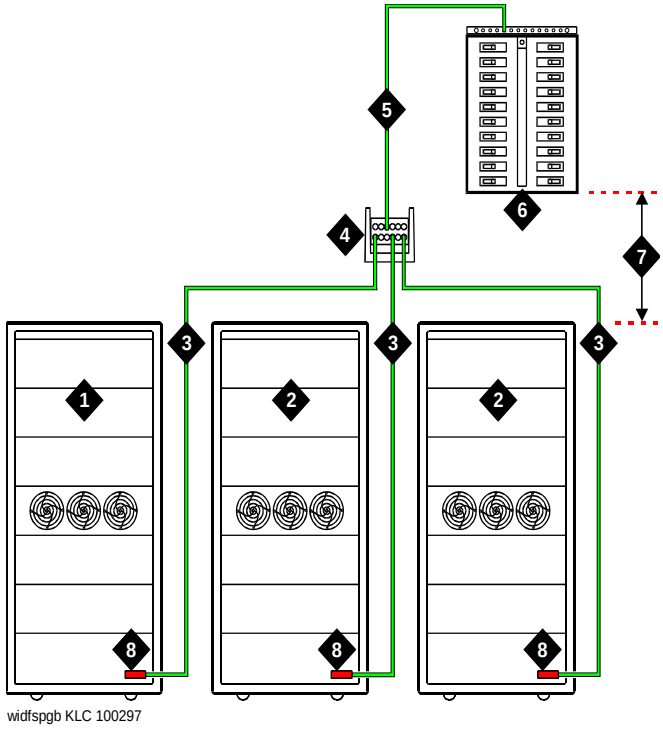


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Figure notes

1 First Media Gateway

2 Additional Media Gateways (if installed)

3 6 AWG (#40) (16 mm^2) Media Gateway GROUND Wire

4 Single-Point Ground Block

5 6 AWG (#40) (16 4 mm^2) Ground Wire to Approved Ground

6 AC Load Center Single-Point Ground

7 Over 50 ft. (15.2 m)

8 Media Gateway Ground Terminal Block

Connect Battery Leads (J58890CH-1)

‘‘Typical Small Battery Assembly’’ on page 55 shows a typical optional small battery holdover assembly. These assemblies may ship with the battery leads disconnected to prevent the batteries from discharging.

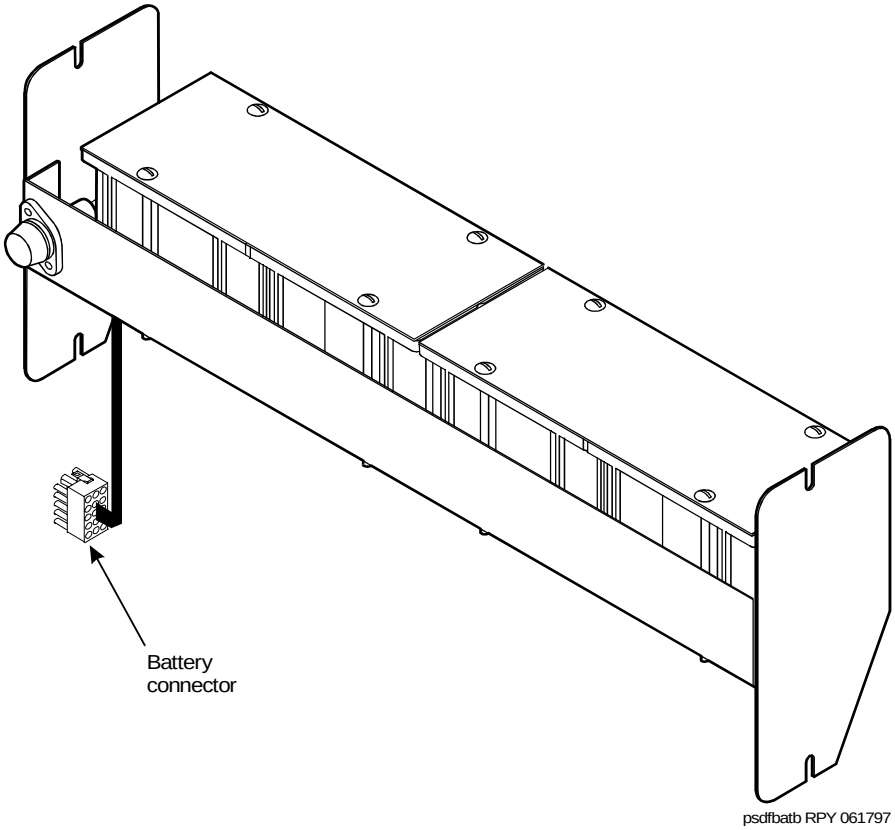
1 Plug the battery connector into the -48 VDC Batteries connector on the rear of the J58890CH-1 Power Distribution Unit.

CAUTION:
Power is present in the media gateway even if the AC power cable is unplugged. When procedures require ALL power to be removed from the media gateway and to prevent unnecessary discharging of the battery, turn off the main circuit breaker located on the front of the power distribution unit.

2 Be sure the main power to the power distribution unit is OFF.

3 At the power distribution unit, set all carrier circuit breakers OFF.

Typical Small Battery Assembly



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Connect Small Battery Holdover

Connect the small battery holdover cable to J20. See “Power Distribution Unit (J58890CH)” on page 57.

Power Distribution Unit (J58890CH)

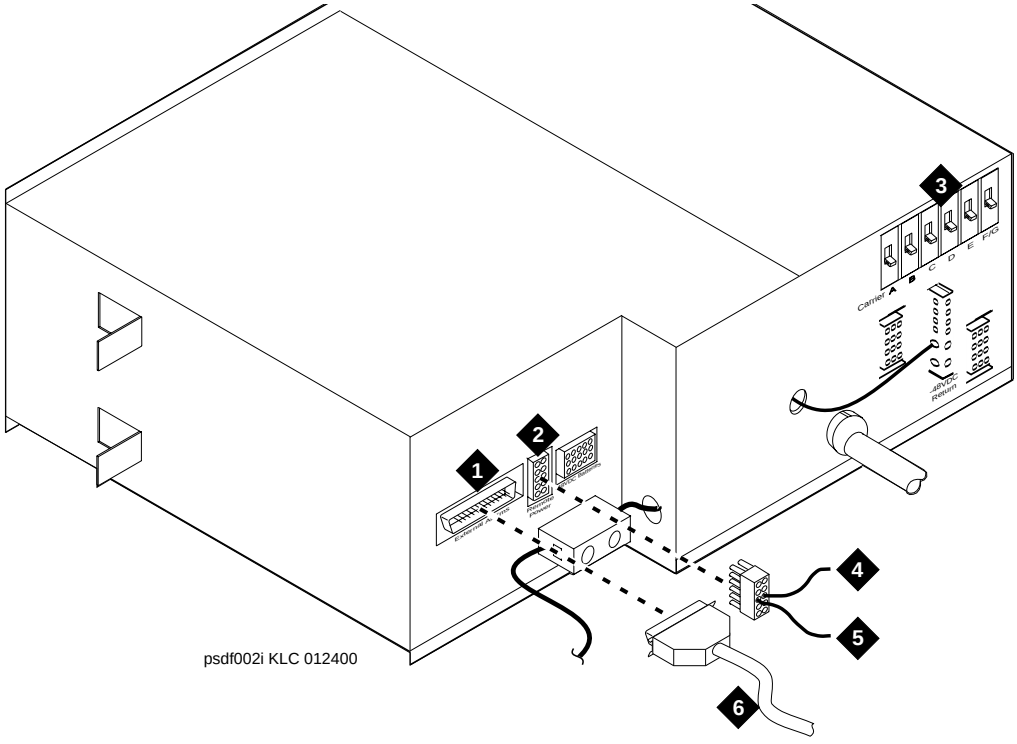

Figure notes

1 External Alarm Cable Connector

2 RPO cable

3 Circuit Breakers

4 Pin 6 (-RPO)

5 Pin 2 (+RPO)

6 External Alarm Cable

Connect Large Battery Holdover

When using large battery holdover, 1 battery media gateway is required for every S8700 Multi-Connect configuration media gateway requiring holdover. The 24-cell battery media gateway must have a float voltage of 54.2 VDC.

1. Connect the -48 VDC cable to the large battery connector. See “Power Distribution Unit (J58890CH)” on page 57.
2. Connect the -48 VDC RETURN cable to the ground terminal block.
3. Connect the temperature sensor cable, from the battery media gateway, to J20.

NOTE:
An adapter cable may be required when connecting the temperature sensor cable to the J58890CH unit. See “Temperature Sensor Cable Adapter Cables” on page 58.

Power Distribution Unit (J58890CH)

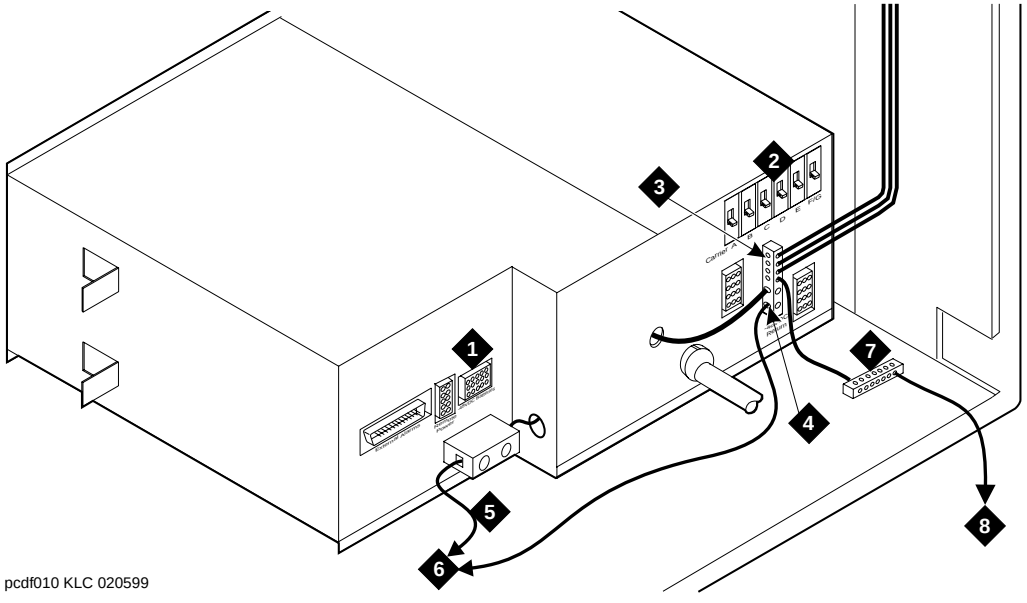

Figure notes

1. Connect small battery holdover cable (or temperature sensor cable from large battery media gateway) to J20
2. Carrier Circuit Breakers
3. Ground Terminal Block
4. Connect -48 VDC Return - 1 AWG (50 mm^2) red cable here.
5. Connect -48 VDC - 1 AWG (50 mm^2) black cable
6. 1 AWG (50 mm^2) 50 ft. (15.2 m) cable to large battery media gateway. For cables greater than 50 ft. (15.2 m), contact your Avaya representative.
7. Ground Terminal Block
8. To AC load center or approved single-point ground block

Temperature Sensor Cable Adapter Cables	
H600-476 Adapter Cable	**Usage**
Group 1 (G1)	24-cell customer-provided battery
Group 3 (G3) (included with battery media gateway)	24-cell Avaya battery

Connect Shorting Cable to J58890CE-2

CAUTION:
For a media gateway with a battery charger, read the caution label on the 397C battery charger before disconnecting batteries.

Some media gateways contain a J58890CE-2 AC Power Distribution Unit without an optional battery charger. Install the shorting cable only when a battery charger is *not* installed. If you do not install the shorting cable or a battery charger, then an alarm appears.

1. Set the circuit breakers on the power distribution unit OFF. See ‘‘Shorting Cable Installation’’ on page 58.
2. At the rear of the media gateway, insert the shorting cable (H600-442-G1) into J11. The cable is keyed so it can fit only 1 way.

Shorting Cable Installation

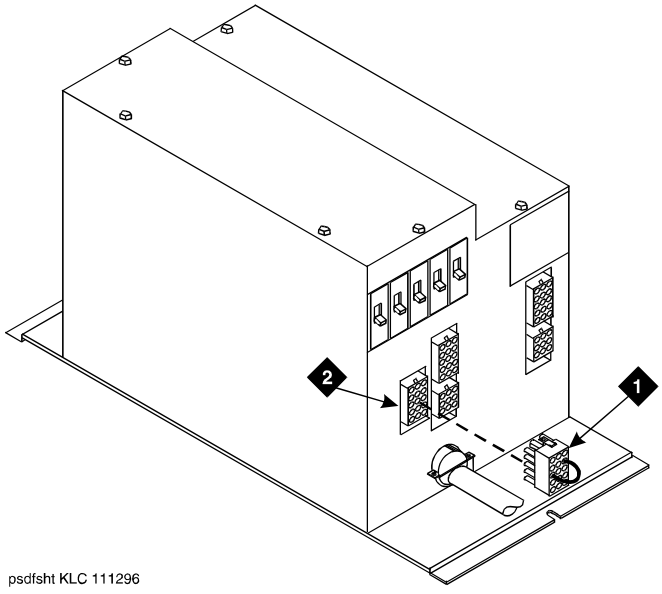

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Figure notes

1. Shorting Cable (H600-442-G1) (if battery charger is not installed)
2. J11

Connect AC Power

1 Set the main circuit breakers on the power distribution unit OFF.

2 Connect media gateway AC line cords to the AC power receptacles.

NOTE:
Do not power up the S8700 Multi-Connect configuration at this time.

Connect DC Power and Ground

CAUTION:
Grounding of the S8700 Multi-Connect configuration shall comply with the general rules for grounding contained in Article 250 of the National Electrical Code, NFPA 70. For more information, refer to Approved Grounds. PDF

The grounding methods for the DC-powered S8700 Multi-Connect configuration are more complex than that of an AC-powered S8700 Multi-Connect configuration.

‘‘Typical Power and Ground for a DC power cabinet’’ on page 60 shows a typical power and ground layout for a DC power cabinet. The size of the wire required for the -48 volt DC and -48 volt return must ensure the voltage supplied by the battery plant is maintained between -42.5 and -54.2 volts DC at all times for proper operation and to prevent hardware damage. The wire must be sized for a maximum voltage drop of 0.5 VDC in each leg of the DC distribution.

Task List: Connect DC Power and Ground

Perform these tasks to connect DC power and ground, power distribution unit (J58890CH-1 Only):

- ‘‘Install Rectifier Modules and Battery Interface Unit’’ on page 60
- ‘‘Connect Power and Ground(s)’’ on page 62

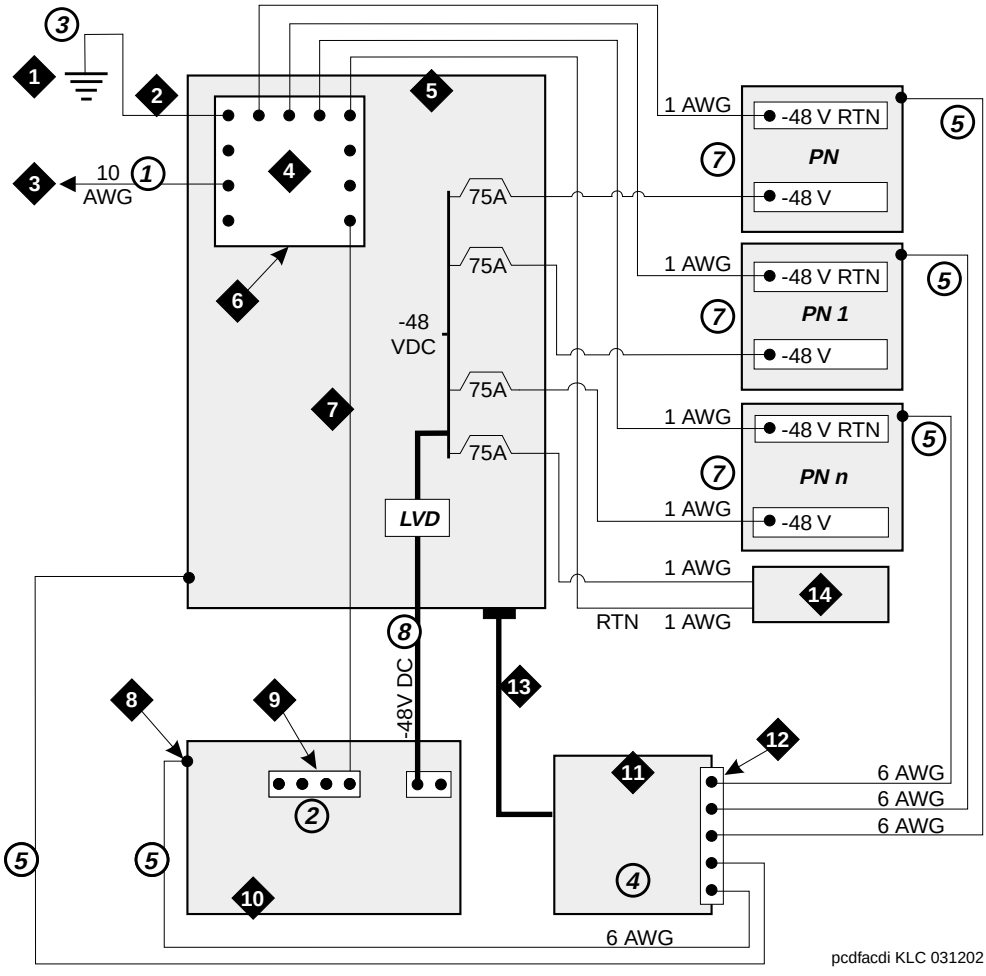
Perform these tasks to connect DC Power and Ground (J58890CF Only):

NOTE:
These installation tasks correspond to the numbers in ‘‘Typical Power and Ground for a DC power cabinet’’ on page 60:

- ‘‘Install Coupled Bonding Conductor Wires’’ on page 64
- ‘‘Connect Grounds for DC Battery and Power Cabinets’’ on page 64
- ‘‘Connect DC Power cabinet Approved Ground’’ on page 64
- ‘‘Connect AC Power to DC Power cabinet’’ on page 65
- ‘‘Connect Ground Wires for DC Power Systems’’ on page 65
- ‘‘Turn Circuit Breakers Off’’ on page 65
- ‘‘Connect DC Power to the Media Gateways’’ on page 66

- “Connect DC Battery Cabinet to DC Power Cabinet’’ on page 67
- If necessary, “Connect Mixed AC/DC Power and Ground’’ on page 67

Typical Power and Ground for a DC power cabinet



Install Rectifier Modules and Battery Interface Unit

Each rectifier module operates as an integral part of a complete power system with battery backup. The modules operate in a redundant, high reliability mode to provide -48 VDC at 850 W to a common power bus.

The Battery Interface Unit controls the rectifier modules, manages the batteries, and reports the status of system power. The unit provides the Remote Power Off (RPO) option and battery alarm interfaces for internal and external alarms.

1 Install the BU3200A Battery Interface Unit (comcode 107781502) in the first slot of the power distribution unit. See ‘‘Rectifier Module Installation’’ on page 61.

NOTE:
The Battery Interface Unit and the rectifier modules are keyed and can only install 1 way.

2 Install the first 2 RM0850HA100 Rectifier Modules (comcode 107793796) into the second and third slots of the power distribution unit.

3 If 2 to 3 carriers are installed in the system, install a third rectifier module (N+1).

4 If 4 to 5 carriers are installed in the system, install a fourth rectifier module.

5 The fifth rectifier module slot is reserved for future system growth.

Rectifier Module Installation

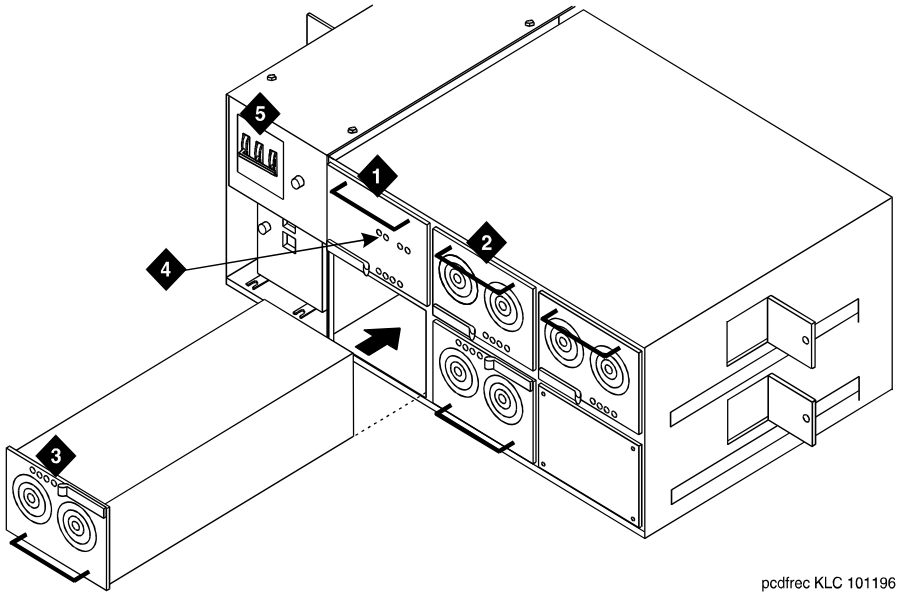


Figure notes

1 Install Battery Interface Unit into Slot 1

2 Install Rectifier Modules into Slots 2-5

3 Rectifier Module 3 (in Slot 4)

4 Test Points

5 Main Circuit Breakers

Connect Power and Ground(s)

Have a qualified electrician connect and route wires from the AC load center to the dedicated electrical outlet for the power distribution unit.

1. Connect 1 end of a 6 AWG (#40) (16 mm^2) cabinet GROUND wire to the ground terminal block at the bottom rear of the cabinet. See ‘‘Typical Media Gateway Grounding Wiring Diagram’’ on page 63.
2. Route the cabinet GROUND wire to the AC load center single-point ground and connect.
3. Connect each remaining media gateway to the AC load center single-point ground.

Power Distribution Unit (J58890CH)

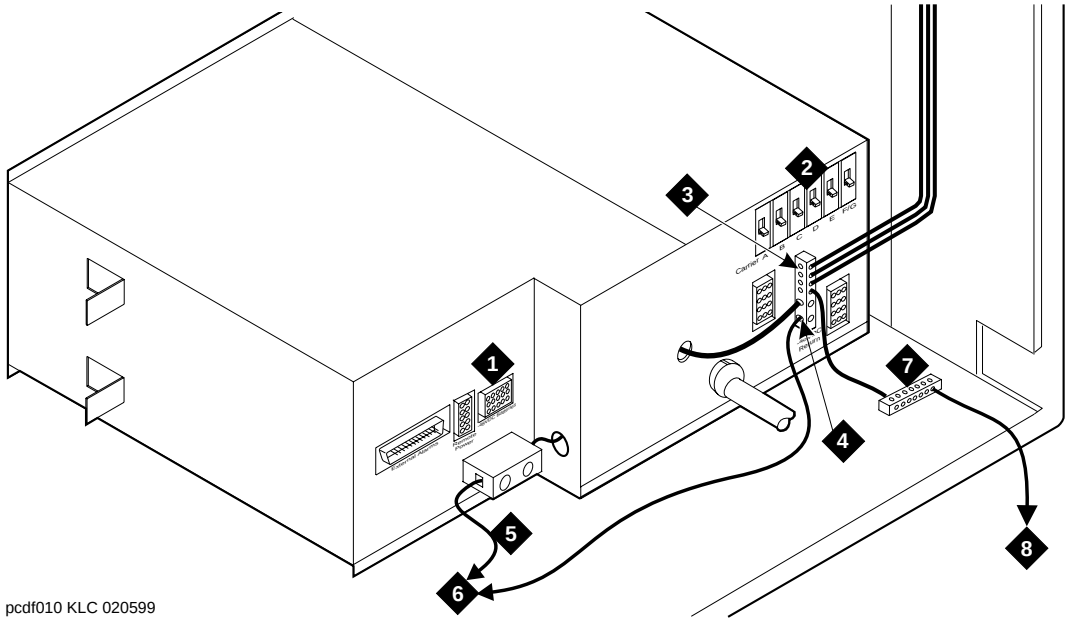


Figure notes

1. Connect small battery holdover cable (or temperature sensor cable from large battery cabinet) to J20
2. Carrier Circuit Breakers
3. Ground Terminal Block
4. Connect -48 VDC Return - 1 AWG (50 mm^2) red cable here.
5. Connect -48 VDC - 1 AWG (50 mm^2) black cable
6. 1 AWG (50 mm^2) 50 ft. (15.2 m) cable to large battery cabinet. For cables greater than 50 ft. (15.2 m), contact your Avaya representative.
7. Ground Terminal Block
8. To AC load center or approved single-point ground block

Typical Media Gateway Grounding Wiring Diagram

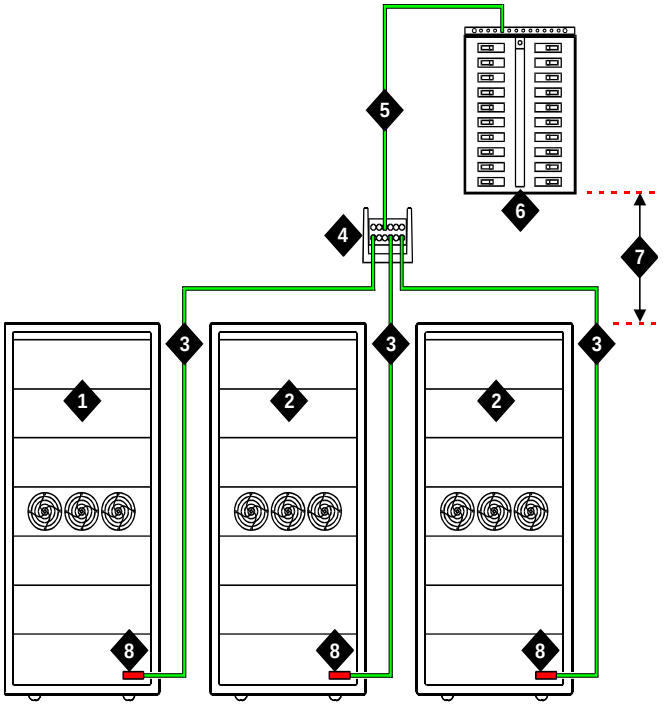


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Figure notes

1 First Media Gateway

2 Additional Media Gateways (if installed)

3 6 AWG (#40) (16 mm2) Media Gateway GROUND Wire

4 Single-Point Ground Block

5 6 AWG (#40) (16 4 mm2) Ground Wire

6 Wire to Approved Ground

7 AC Load Center Single-Point Ground

8 Over 50 ft. (15.2 m)

9 Media Gateway Ground Terminal Block

Install Coupled Bonding Conductor Wires

This is a conductor that connects to the single-point ground block and runs adjacent to pairs in an associated cable. The mutual coupling between the CBC and the pairs reduces potential differences in terminating equipment. The conductor consists of a 10 AWG (#25) (6 mm^2) wire terminated at the CBC ground terminal bar at the Main Distribution Frame (MDF).

1. At the DC power cabinet, connect a 10 AWG (#25) (6 mm^2) ground wire to the Ground Discharge Bar. See ‘‘Typical Power and Ground for a DC power cabinet’’ on page 60.
2. Route the 10 AWG (#25) (6 mm^2) ground wire to the CBC ground terminal bar at the MDF. Be sure a minimum of 12 in. (30.5 cm) spacing is maintained between the CBC and other power and ground leads.
3. Tie wrap the ground wire to the inside wiring cable.

NOTE:
The ground wires are connected to the CBC as instructed in ‘‘Cabling Port Networks’’ on page 116.

Connect Grounds for DC Battery and Power Cabinets

NOTE:
The wire in the next step must be sized for a maximum voltage drop of 0.5 VDC in each leg of the DC distribution. In this example 1 AWG is used.

1. Measure and cut a minimum of a 1 AWG (#70) (44 mm^2) wire long enough to reach between the ground connection terminal in the DC Battery cabinet and the Ground Discharge Bar in the DC Power cabinet. See ‘‘Typical Power and Ground for a DC power cabinet’’ on page 60.
2. Crimp terminal lugs on each end of the wire. Terminal lugs are furnished as part of D-181895, Kit of Parts (Comcode 105434559).
3. At the DC power cabinet, connect the wire to the Ground Discharge Bar.
4. Route the wire through one of the holes in the side of the cabinets and terminate it on the Ground Connection Terminal in the DC battery cabinet.

Connect DC Power cabinet Approved Ground

NOTE:
The wire must be at least as large as the largest distribution wire in the S8700 Multi-Connect configuration (required by UL). In this example 1 AWG is used.

1. At the DC power cabinet, connect a 1 AWG (#70) (44 mm^2) ground wire to the Ground Discharge Bar. See ‘‘Typical Power and Ground for a DC power cabinet’’ on page 60.
2. Route the ground wire out of the cabinet and terminate it on the approved ground. The approved ground must be identified with a grounding tag (FORM 15657NR or equivalent). See Approved Grounds. PDF

Connect AC Power to DC Power cabinet

CAUTION:
Power is present in the cabinet even if the AC power cable is unplugged. Turn off the main circuit breaker on the front of the cabinet when procedures require ALL power to be removed from the cabinet.

1. Ensure the associated circuit breakers at the AC power panel are OFF.
2. Have an electrician connect AC power leads to the rectifiers using the instructions provided with the rectifiers in the DC Power cabinet. Each rectifier should have its own branch circuit. Terminate leads on the AC INPUT terminal block of each rectifier.

Connect Ground Wires for DC Power Systems

CAUTION:
Do not connect any ground wires between cabinets. All ground wires must be terminated at the single-point ground block at the main AC supply (AC mains).

1. Connect a 6 AWG (#40) (16 mm^2) wire to the first cabinet ground terminal block.
2. Route the wire to the AC mains single-point ground block and connect.
3. Connect a 6 AWG (#40) (16 mm^2) wire to the each of the other cabinets' ground terminal block.
4. Route the wire(s) to the AC mains single-point ground block and connect.
5. Connect a 6 AWG (#40) wire to the DC battery cabinet and DC power cabinet.
6. Route wires to the AC mains single point ground block and connect them.

Turn Circuit Breakers Off

The main circuit breaker on a DC power cabinet is located on the front of the power distribution unit. The circuit breakers on the rear of the power distribution unit control the individual carriers. See ''Power Distribution Unit (J58890CH)'' on page 66 for the location of the carrier breakers.

1. Set the main circuit breaker to **OFF**.
2. Set the carrier circuit breakers to **OFF**.

Power Distribution Unit (J58890CH)

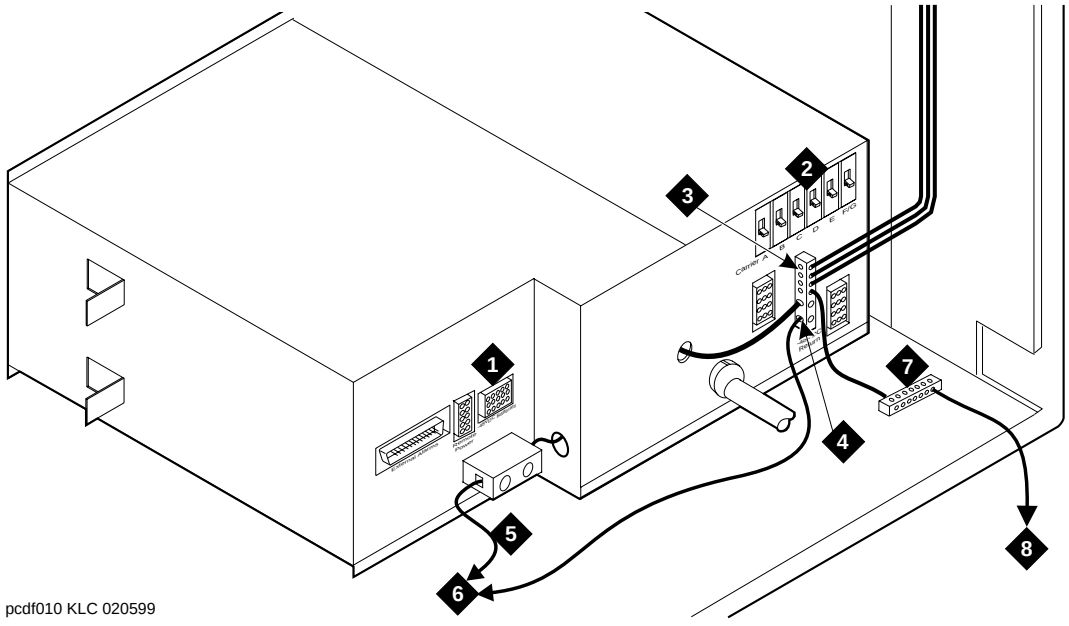


Figure notes

1 Connect small battery holdover cable (or temperature sensor cable from large battery cabinet) to J20

2 Carrier Circuit Breakers

3 Ground Terminal Block

4 Connect -48 VDC Return - 1 AWG (50 mm^2) red cable here.

5 Connect -48 VDC - 1 AWG (50 mm^2) black cable

6 1 AWG (50 mm^2) 50 ft. (15.2 m) cable to large battery cabinet. For cables greater than 50 ft. (15.2 m), contact your Avaya representative.

7 Ground Terminal Block

8 To AC load center or approved single-point ground block

Connect DC Power to the Media Gateways

1 Be sure the main circuit breaker is OFF.

2 Measure and cut 2 pieces of 1 AWG (#70) (44 mm^2) wire long enough to reach from the DC power cabinet to the first media gateway.

3 At the DC power cabinet, connect the -48 volt DC wire to the DC OUTPUT circuit breaker. See ‘‘Typical Power and Ground for a DC power cabinet’’ on page 60. Connect the -48 volt RTN (return) wire to the ground discharge bar.

4 Route the wires out of the cabinet, through the hole in the lower rear cover, and to the first media gateway.

5 Connect the -48 volt DC wire to the -48VDC terminal on the J58890CF Power Distribution Unit.

6 Connect the -48 volt RTN wire to the -48RTN terminal on the J58890CF Power Distribution Unit terminal block.

7 Repeat Steps 2 through 6 for each cabinet and auxiliary cabinet in the system.

Connect DC Battery Cabinet to DC Power Cabinet

NOTE:
The wire in the next step must be sized for a maximum voltage drop of 0.5 VDC in each leg of the DC distribution. In this example 1 AWG is used.

1 Turn off the main circuit breaker on the DC battery cabinet.

2 Turn off the main circuit breaker on the DC power cabinet.

3 Measure and cut a 6 AWG (#40) (16 mm^2) wire long enough to reach from the DC battery cabinet's -48 Volt DC terminal to a DC OUTPUT distribution bus on the DC power cabinet.

4 At the DC battery cabinet, connect the -48 volt DC wire to the -48 VDC connector.

5 Route the wire out of the cabinet through the hole in the lower rear cover and to the DC power cabinet.

6 At the DC power cabinet, terminate the -48 volt DC wire on a DC OUTPUT distribution bus.

Connect Mixed AC/DC Power and Ground

''Typical Power and Ground for a Mixed AC/DC-Powered Media Gateway'' on page 68 shows a power and ground layout for a mixed AC/DC power cabinet configuration in the same equipment room with the first media gateway being DC powered and the next media gateway being AC powered. If a third media gateway is part of the S8700 Multi-Connect configuration, use the same basic connections.

Typical Power and Ground for a Mixed AC/DC-Powered Media Gateway

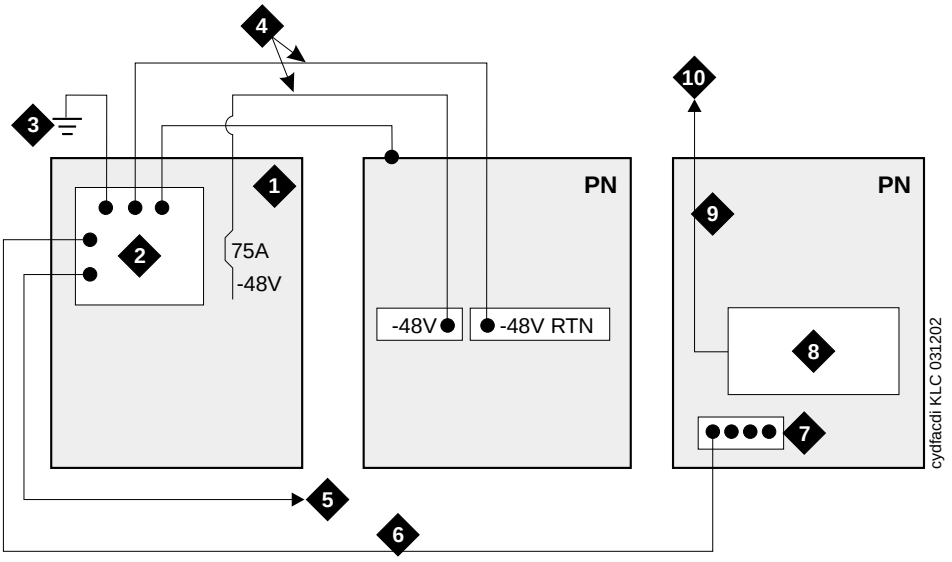


Figure notes

1 DC power supply

2 Ground Discharge Bar

3 Approved Ground

4 1 AWG up to 50 feet (15.2m) or engineered for less than 0.5 volt drop per conductor

5 To Coupled Bonding Conductor terminal block at Main Distribution Frame

6 Coupled Bonding Conductor

7 Media Gateway ground block

8 AC power-distribution unit

9 AC power cord

10 AC power source

Connect Remote Power Off Cable

‘‘Remote Power Off Cable Connections — Part 1’’ on page 70 shows the location of the Remote Power Off (RPO) cable. The opposite end of the cable connects to the Emergency Power Off (EPO) switch located outside of the equipment room.

Even though the equipment room EPO switch disconnects main AC power to the equipment room, it cannot disconnect the battery power from the J58890CH. An auxiliary set of contacts inside the EPO are used for this function.

1. Plug the RPO cable into the connector shown in ‘‘Remote Power Off Cable Connections — Part 1’’ on page 70.
2. Route the opposite end of the wires to the EPO switch. The opposite end of the RPO cable connects to the internal relay.

NOTE:
The EPO switch and the auxiliary contacts (inside the EPO switch assembly) are customer-provided.

CAUTION:
The auxiliary contacts inside the EPO switch assembly must **close** when the switch is pressed. This contact closure energizes the relay inside the power distribution unit, causing the connection to the battery holdover assembly to open.

‘‘External Alarm Cable Connection’’ on page 71 shows the cabling from the auxiliary contacts inside the EPO switch assembly and how they connect to the internal relay.

3. Connect the RPO wires to the auxiliary contacts on the EPO switch. See ‘‘External Alarm Cable Connection’’ on page 71.

NOTE:
The EPO switch and the auxiliary contacts for the RPO connection are customer-supplied.

Remote Power Off Cable Connections — Part 1

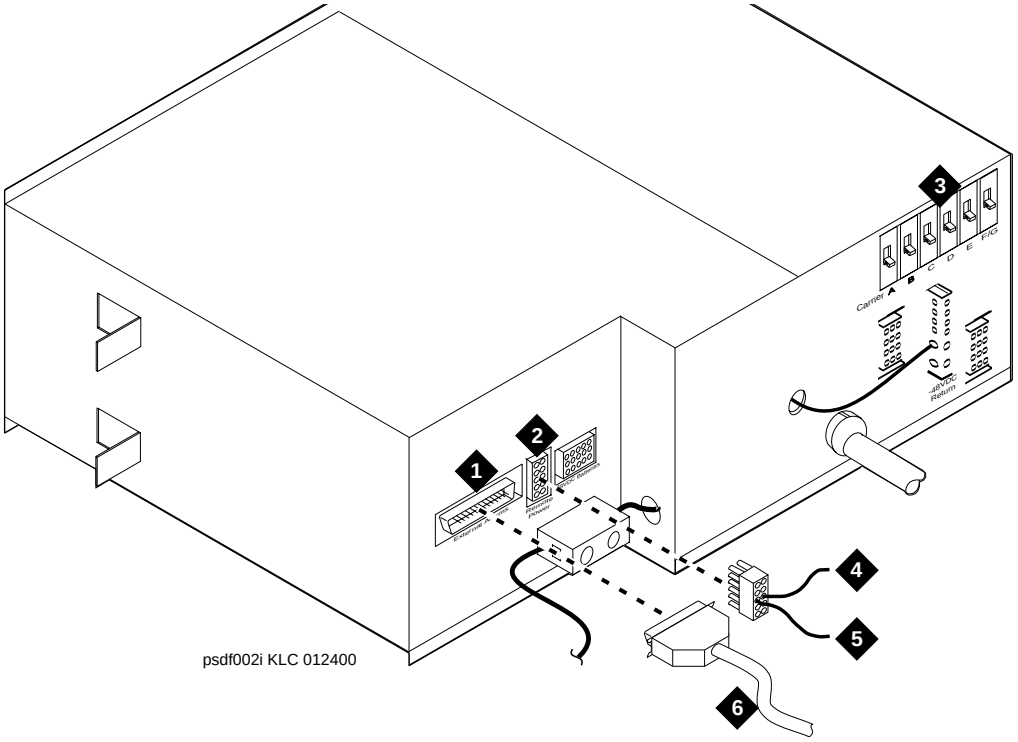


Figure notes

1 External Alarm Cable Connector

2 RPO cable

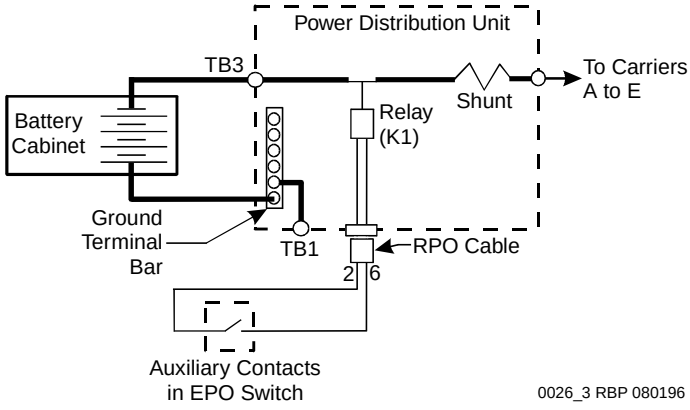
3 Circuit Breakers

4 Pin 6 (-RPO)

5 Pin 2 (+RPO)

6 External Alarm Cable

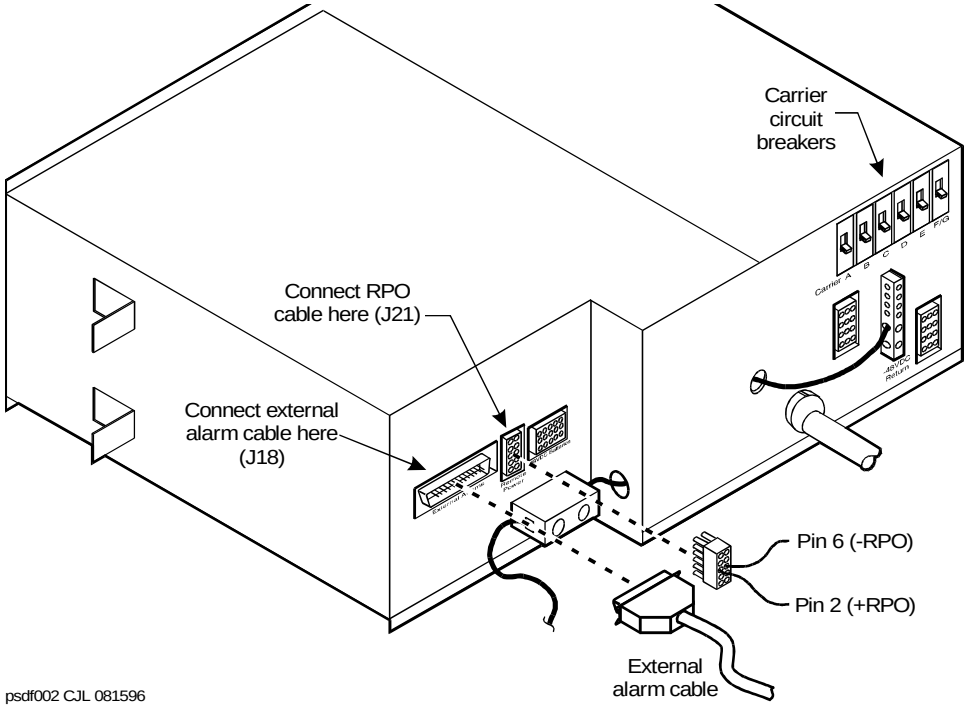
Remote Power Off Cable Connections — Part 2



Connect External Alarm Cable

1. Plug the external alarm cable into the connector shown in "External Alarm Cable Connection'' on page 71.
2. Route the opposite end of the cable to the MDF. The alarm cable is connected to the MDF later.

External Alarm Cable Connection



Check Commercial Power and Connect AC Power

Before powering up the S8700 Multi-Connect configuration, check the AC power using a KS-20599 digital voltmeter (DVM) (or equivalent).

1. Set the DVM to the 250 volt range.
2. Carefully measure the voltage between the hot and neutral side of the receptacle. The neutral wire is white, the hot wire is black.
3. Verify the meter reads 106 to 128 VAC. If not, have a qualified electrician correct the problem.
4. Measure the voltage between the neutral and ground side of the receptacle. The ground wire is green.
5. Verify the meter reads 0 VAC. If not, have a qualified electrician correct the problem.
6. Set all media gateway power modules **OFF**. Plug the AC power cable into the receptacle.

Connect Fiber Optic Interconnect Cabling

Signals between the PN with the center stage switch (for convenience called PN1) and the other PNs are carried by fiber optic cables. Lightwave transceivers provide the required fiber optic interface.

The fiber optic cables from the center stage switch route to a Lightguide Interconnect Unit (LIU) or fiber optic shelf.

Use multimode fiber transceivers and multimode fiber optic cables between media gateways unless single-mode fiber is required (distance restrictions). Use metallic cables between carriers.

CAUTION:
The PN with the center stage switch may contain a Class 1 LASER device if a single-mode fiber optic cable is connected to a remote port network.

Make the required connections for the installation:

- ‘‘Connect Fiber Optic Cables’’ on page 73
- ‘‘Connect Duplex- or High-Reliability CSS-Connected PN1 with 1 Switch Node’’ on page 73
- ‘‘Connect High-Reliability CSS-Connected PN1 with 1 Switch Node’’ on page 74
- ‘‘Connect Critical Reliability CSS-Connected PN1 with 1 Switch Node’’ on page 75

Connect Fiber Optic Cables

NOTE:
Always use the Cable Running List that accompanies the S8700 Multi-Connect configuration when installing fiber optic cables. The following procedure is a *typical* example of how to cable a S8700 Multi-Connect configuration.

If the media gateways are close together, the signal may go through a single, directly connected fiber optic cable. If the media gateways are far apart, it may be easier to connect the media gateways through an LIU or fiber shelf.

For each fiber indicated in the fiber optic Cable Running List:

1. Install a lightwave transceiver on the media gateway connector at the position in the FROM column in the running list.
2. Select a cable indicated by the CABLE CODE and LENGTH in the running list. Connect 1 of the fibers to each connector on the lightwave transceivers just installed. The fiber is numbered 1 or 2. The connector on the transceiver is labeled TX or RX. Keep track of which fiber connects to which transceiver connector. Label both ends of these cables.
3. Route the fiber optic cables from the transceiver out of the media gateway. Secure the cables to the cable-tie rack. Keep the fiber optic cables clear of the heavier I/O cables.
4. If the media gateway in the TO column in the running list is located remotely from the FROM media gateway, connect to the TO media gateway by way of the LIU.
5. Install a lightwave transceiver on the media gateway connector at the position in the TO column in the running list.
6. Route the cables from the FROM media gateway down into the cable trays of each PN media gateway. Connect the cables to the lightwave transceiver just installed on the TO media gateway.
7. Connect the fiber that comes from the TX connector of the FROM transceiver to the RX connector of the TO transceiver and vice versa.
8. Route the cables through the media gateway and through cable organizers as provided. Secure the cables to the cable-tie rack.

Connect Duplex- or High-Reliability CSS-Connected PN1 with 1 Switch Node

‘‘Duplex- or High-Reliability CSS-Connected PN1 with 1 Switch Node’’ on page 74 shows typical fiber optic cabling between media gateways. The cable between the EI and SNI on PN1 is a pre-installed metallic cable (H600-278).

1. If no running list is available, use the outer slots first in alternating order. Connect the first 2 SNI slots to 3 and 20 (the left most and right most of the unused slots). Next, use 4 and 19, and so forth.
2. Add links to the PNs in alternating order (20, 3, 19, 4, 18, 5, and so forth).

Duplex- or High-Reliability CSS-Connected PN1 with 1 Switch Node

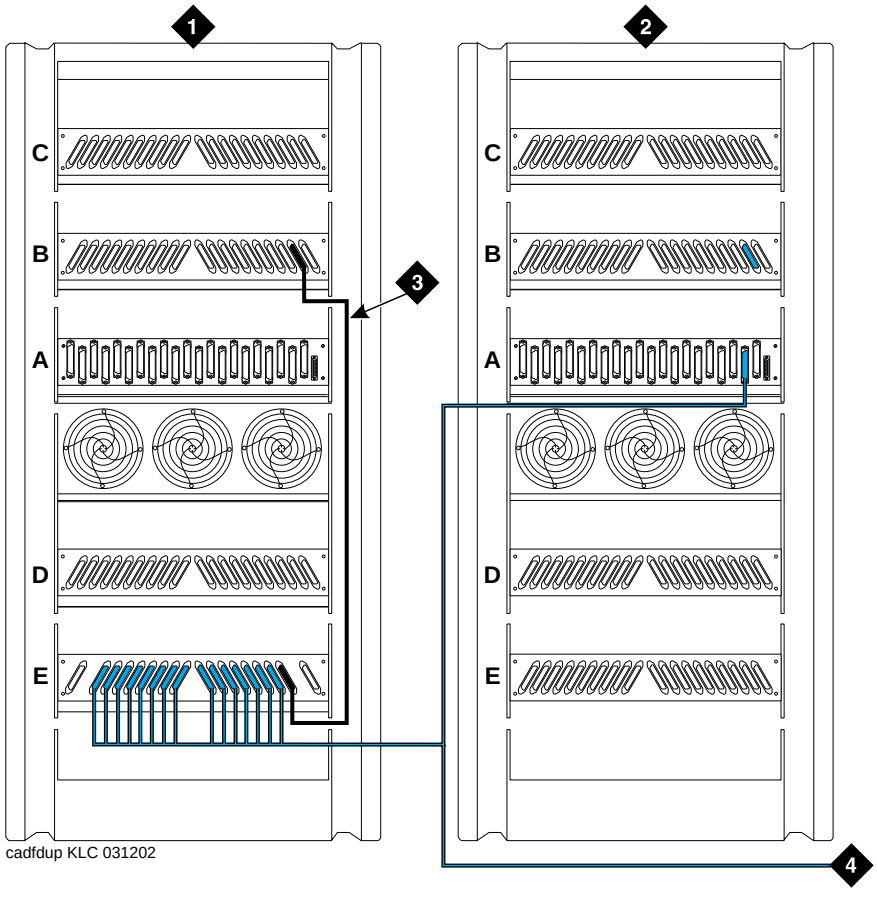


Figure notes

1. Media Gateway 1 (PN1 with 1 Switch Node)
2. Port Networks 2 through 16
3. H600-278 Metallic Cable
4. To other port networks

Connect High-Reliability CSS-Connected PN1 with 1 Switch Node

‘‘High-Reliability CSS-Connected PN1 with 1 Switch Node’’ on page 75 shows typical fiber optic cabling between media gateways. The cable between the EI and SNI on the PN1 media gateway is a pre-installed metallic cable (H600-278).

Connect the cables between PN1 and each of the other PN media gateways in an alternating port slot order: 3, 19; 4, 18; 5, 17; and so forth. Media Gateway 1 is PN1 with 1 Switch Node.

High-Reliability CSS-Connected PN1 with 1 Switch Node

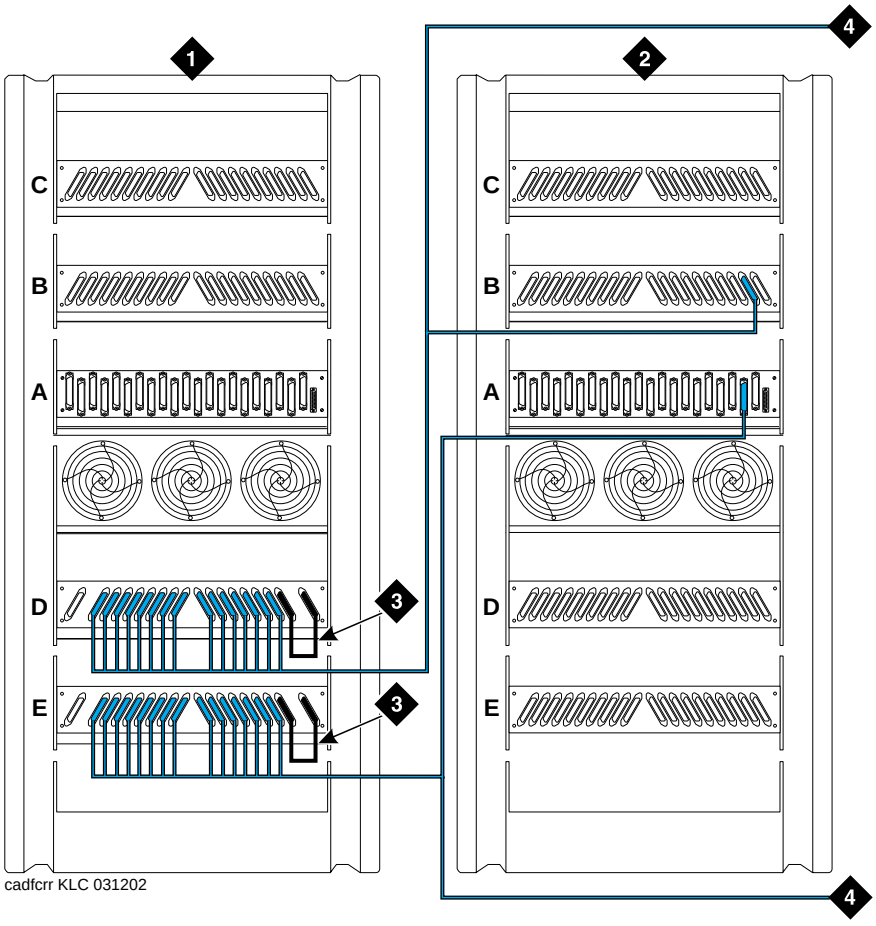


Figure notes

1. Media Gateway 1 (PN1 with 1 Switch Node)
2. Port Network 2 through 15
3. H600-278 Metallic Cable
4. To other port networks

Connect Critical Reliability CSS-Connected PN1 with 1 Switch Node

‘‘Critical-Reliability CSS-Connected PN1 with 1 Switch Node’’ on page 76 shows typical fiber optic cabling between media gateways. The cable between port slots 1 and 2 on each switch node is a metallic cable (H600-278).

Connect the 2 groups of 1 to 15 cables between PN1 and each of the other PNs in an alternating port slot order: 20, 3; 19, 4; 18, 5; and so forth.

Critical-Reliability CSS-Connected PN1 with 1 Switch Node

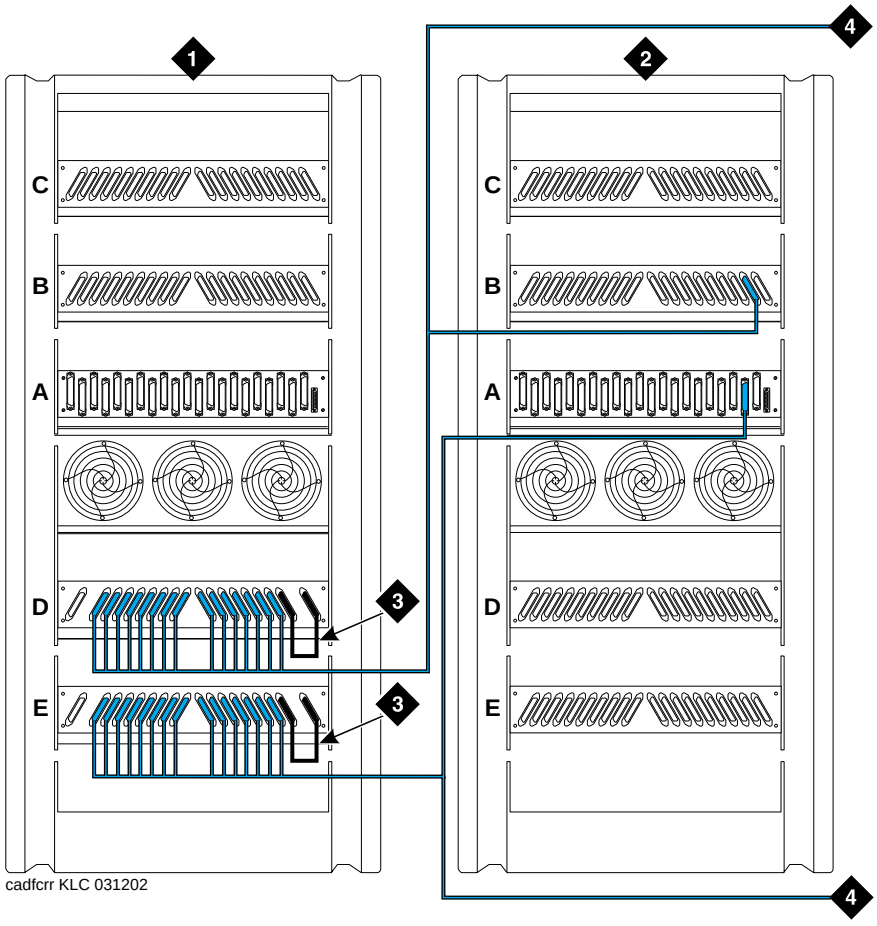


Figure notes

1 Media Gateway 1 (PN1 with 1 Duplex Switch Node)

2 Port Network 2 through 16

3 H600-278 Metallic Cable

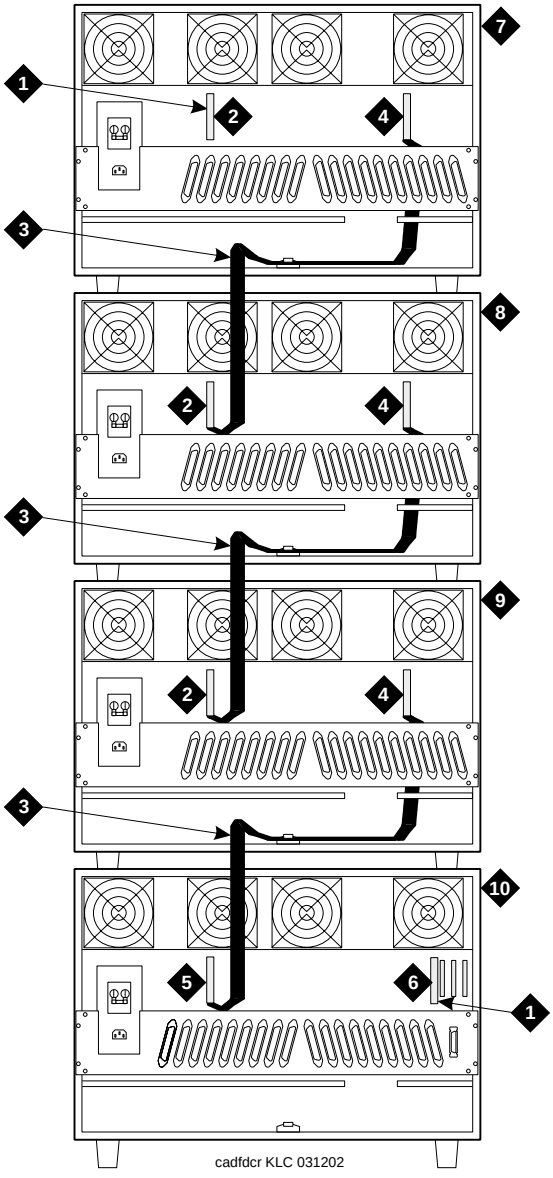
4 To other Port Networks

Installing an Avaya SCC1 Media Gateway Stack

This section describes how to install Avaya SCC1 Media Gateway stacks.

‘‘Typical Avaya SCC1 Media Gateway stack’’ on page 77 shows a typical Avaya SCC1 Media Gateway stack.

Typical Avaya SCC1 Media Gateway stack



Perform these tasks before you begin the installation:

- “Unpack and Inspect Media Gateways” on page 79
- “Unpack and Inspect Stratum 3 Clock Cabinet” on page 107
- “Check Circuit Packs” on page 79
- “Correct Shipping Errors” on page 45

Perform these steps to install the media gateways:

- “Position the Media Gateway Stacks” on page 80 or “Position the Auxiliary Cabinet (Optional)” on page 46
- “Install Earthquake Protection for Avaya SCC1 Media Gateway” on page 80 (if required)

WARNING:
S8700 Multi-Connect configuration grounding must comply with the general rules for grounding contained in Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country containing the equipment.

- “Ground DC power media gateways” on page 83 and “Connect DC Power” on page 87 or “Ground and Connect AC-Powered Media Gateways” on page 94
- “Connect Time Division Multiplexing Bus Cables” on page 96
- “Verify Port Media Gateway Address Plugs” on page 98
- “Install Rear Panels” on page 99
- “Install Rear Ground Plates (Media Gateways with Earthquake Protection)” on page 100 or “Install Front Ground Plates (Media Gateways with Radiation Shielding and Earthquake Protection)” on page 101 or “Install Media Gateway Clips (Media Gateways without Earthquake Protection)” on page 103
- “Connect S8700 Multi-Connect configuration Cables” on page 104

1. Check the customer’s order and the shipping packing lists to confirm all equipment is present.
2. Check the S8700 Multi-Connect configuration adjuncts for damage and report all damage according to local shipping instructions.
3. If any equipment is missing, report the information to your Avaya representative.

Unpack and Inspect Media Gateways

CAUTION:
Lifting the media gateway requires two people, as it may weigh as much as 130 pounds (60 kilograms). Use caution to avoid injury.

1. Unpack the media gateways from the shipping material and inspect for damage.
2. Open and remove the front door and rear panels from the media gateway.
3. Verify the label near the circuit breaker on the power supply toward the rear of each media gateway corresponds to the local voltage type.

DANGER:
If the label is different than the voltage type at the site, notify your Avaya representative immediately for a replacement power supply. Do not, under any circumstances, connect an incorrect power supply to a power source.

Check Circuit Packs

1. Ensure all circuit packs are fully inserted into the proper slots according to the Customer Service Document (CSD).

   Report any discrepancies in circuit pack type or quantity to your Lucent Technologies representative. For detailed circuit pack descriptions, refer to Designing the Avaya S8700 Media Gateway for Multi-Connect Configuration.
2. Check the S8700 Multi-Connect configuration adjuncts for damage and report all damage according to local shipping instructions.
1. Red-tag all defective and over-shipped equipment and return to the nearest Material Stocking Location (MSL).

For Avaya Order Exception in the United States, call 1-800-772-5409. For international customers, contact your order service agent.

2. Direct all short-shipped reports to the nearest MSL.

Contact the appropriate location for specific instructions.

Position the Media Gateway Stacks

CAUTION:
Lifting the media gateway may require 2 people, as it may weigh as much as 130 pounds (60 kilograms). Use caution to avoid injury.

Before beginning the media gateway installation, check the location of the AC/DC power receptacles. The receptacles must be on separately fused circuits *not* controlled by wall switches. They must be located within 10 feet (3 meters) of the media gateway, and outside the Main Distribution Frame (MDF) area.

Refer to the serial numbers and lettered designation strips in the Customer Service Document (CSD) when stacking the media gateways. If earthquake protection is required, skip to ‘‘Install Earthquake Protection for Avaya SCC1 Media Gateway’’ on page 80. Return to this section when finished.

Perform this step first for *all* standard reliability media gateway stack installations.

1. Install the media gateway stack
   - Place expansion control media gateway A (J58890N) on the floor in the position determined when the room layout was planned.
   - Set port media gateway B (J58890H) on top of expansion control media gateway A.
   - Set port media gateway C (J58890H) on top of port media gateway B.
   - Set port media gateway D (J58890H) on top of port media gateway C.
2. Install 2 through 44 media gateway stacks using the instructions in step 1.

Install Earthquake Protection for Avaya SCC1 Media Gateway

Earthquake protection installs only on Avaya SCC1 media gateways.

1. Position the expansion control media gateway A (J58890N) in the position it is to occupy when the installation is complete. Be sure it is level.
2. Using a pencil or marker and using the Front Mounting Angle as a template, mark the locations of the two floor mounting holes.
3. Move the media gateway out of the way and drill a hole 0.5-inch (1.3 cm) in diameter and 1.5 inches (3.8 cm) deep at the locations marked in Step 2.
4. Insert a concrete floor anchor (STARR part number 3425) into each hole.
5. Secure the Front Mounting Angle to the floor using the short hex head bolts provided.
6. Move the media gateway back into place.
7. At the rear of the media gateway, remove the two hole plugs from the bottom of the media gateway. See ‘‘Media Gateway Earthquake Mounting — Rear View’’ on page 81.

8 Insert a pencil or marker through the holes in the bottom of the media gateway and mark the floor directly beneath each hole.

9 Move the media gateway out of the way and drill a hole 0.5-inch (1.27 cm) in diameter and 1.5 inches (3.8 cm) deep at the locations marked in Step 10.

10 Insert a concrete floor anchor (STARR part number 3425) into each hole.

11 Move the media gateway back into place and align with the Front Mounting Angle.

12 Attach the media gateway to the Front Mounting Angle using the four supplied #12-24 x 1/2-inch (1.27 cm) thread-forming screws. See ‘‘Front Mounting Angle Location’’ on page 82.

13 Lay the supplied Stiffener on the bottom rear of the media gateway and align with the holes in the bottom of the media gateway. See ‘‘Media Gateway Earthquake Mounting — Rear View’’ on page 81.

14 Slide a nylon washer onto each of the two supplied long hex head bolts.

15 Insert the bolts through the Stiffener and thread into the concrete floor anchor. Tighten securely.

Media Gateway Earthquake Mounting — Rear View

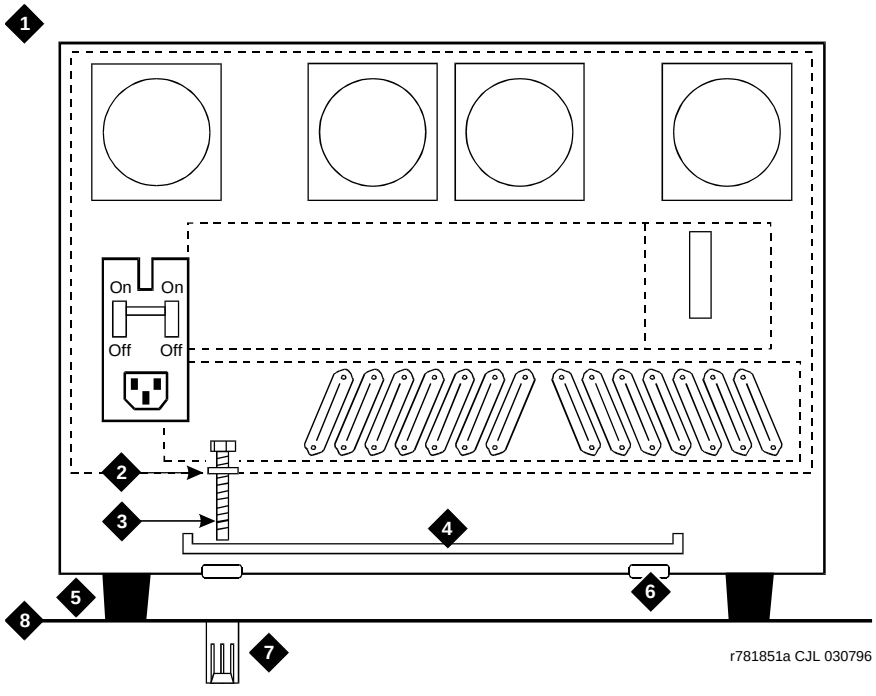


Figure notes

1	Media Gateway	5	Media Gateway Foot
2	Nylon Insulating Washer (2 Required)	6	Floor Plugs (Remove)
3	Long Hex Head Bolt (2 Required)	7	Concrete Floor Anchor
4	Stiffener	8	Concrete Floor

Front Mounting Angle Location

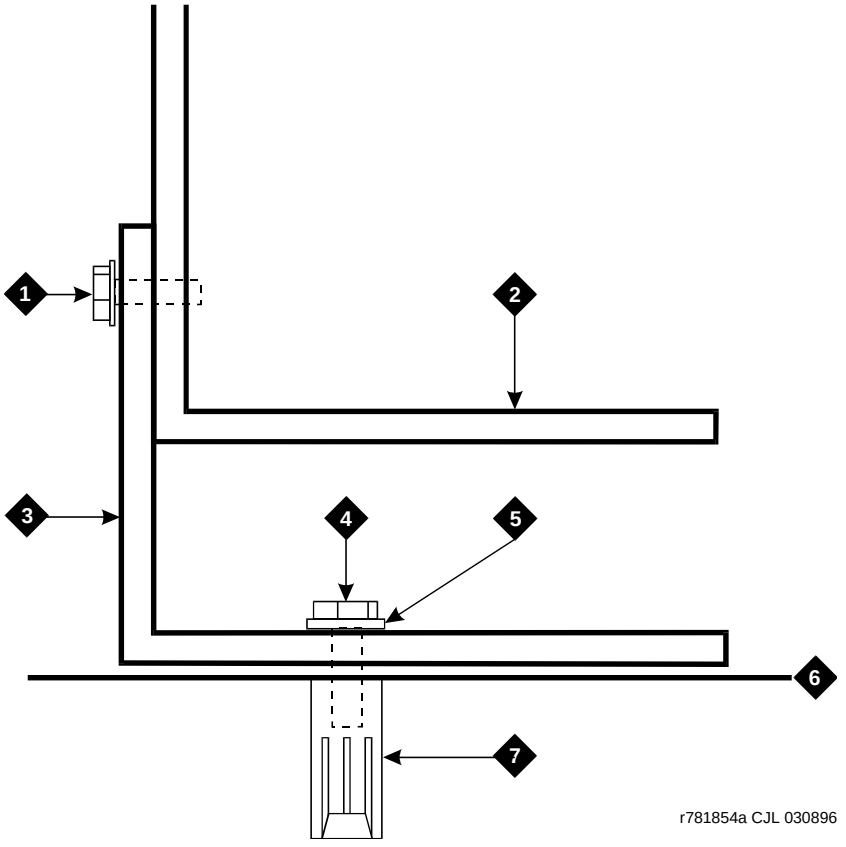


Figure notes

1 #12-24x1/2-inch Thread Forming Screw

2 Media Gateway A

3 Front Mounting Angle

4 Hex Head Bolt

5 Nylon Insulating Washer

6 Concrete Floor

7 Concrete Floor Anchor

Ground DC power media gateways

CAUTION:
S8700 Multi-Connect configuration grounding shall comply with the general rules for grounding contained in Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable code at the installation site.

NOTE:
Before connecting the media gateways to the approved ground, determine the best method of grounding. See Approved Grounds PDF for more information. Also, locate the approved ground as close to the media gateways as possible.

NOTE:
The ground plates and cabinet clips are installed later in this procedure.

Task List: Connect Ground to DC power cabinet

- ‘‘Connect Ground for DC power cabinet’’ on page 83
- ‘‘Connect DC Power Distribution Unit Ground’’ on page 85
- ‘‘Connect DC Power Cabinet Ground’’ on page 86

Connect Ground for DC power cabinet

1. At the DC power cabinet, connect a 1 AWG (#70) (7 mm^2) ground wire to the GROUND DISCHARGE bar. See ‘‘Grounding for DC power cabinet’’ on page 84.
2. Route the ground wire out of the cabinet and terminate it on the approved ground.

CAUTION:
The approved ground must be connected using the correct gauge wire, terminated with a listed clamp, and identified with a grounding tag (FORM 15657NR, or equivalent).

Grounding for DC power cabinet

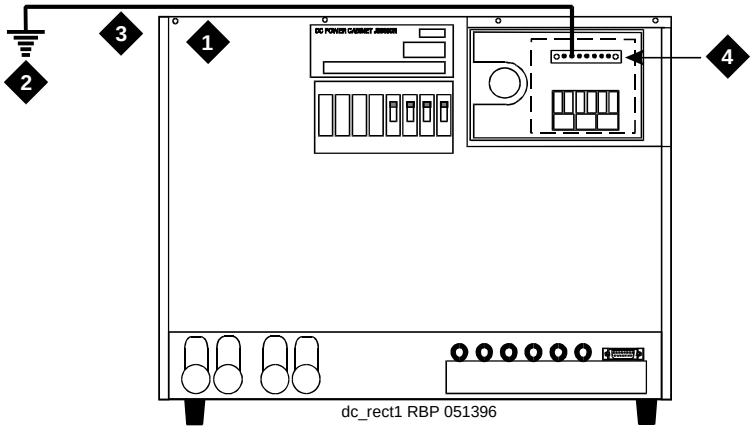


Figure notes

1 DC power cabinet

2 To Approved Ground

3 1 AWG (#70) (7 mm^2) Wire

4 Ground Discharge Bar

Connect DC Battery Frame Ground

1 Cut a length of 6 AWG (#40) (4 mm^2) wire long enough to reach between the DC power cabinet and the DC battery cabinet. See ‘‘Frame Ground Wiring Between cabinet and Battery Cabinet’’ on page 85.

2 Crimp a terminal lug on the each end of the wire. The terminal lugs are furnished as part of D-181895, kit of parts.

3 At the DC battery cabinet, attach the 6 AWG (#2540) (6 4 mm^2) wire to the frame ground mounting hole using a pan head slotted screw, star washer, and hex nut. Tighten the screw securely.

4 Route the opposite end of the wire to the DC power cabinet.

5 Attach the 6 AWG (#40) (4 mm^2) wire to the mounting hole in the top of the cabinet. Use a pan head slotted screw, star washer, and hex nut. Tighten the screw securely.

Frame Ground Wiring Between cabinet and Battery Cabinet

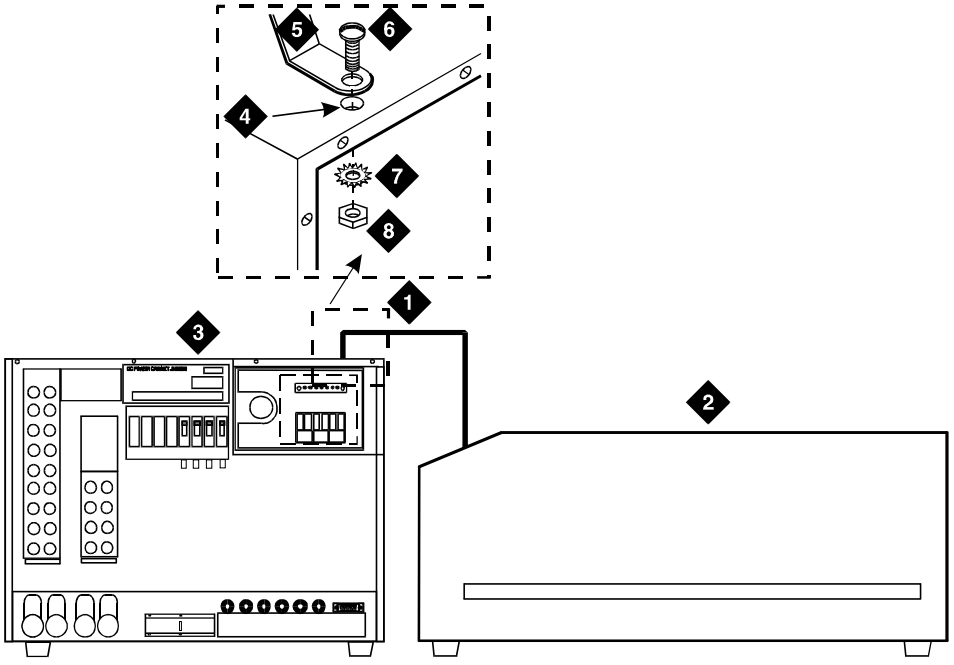


Figure notes

1	6 AWG (#40) (4mm^2) Wire	**5**	Terminal Lug (Part of D-18181895)
2	DC Battery Cabinet	**6**	Pan Head Slotted Screw
3	DC power cabinet	**7**	Star Washer
4	Grounding Hole in Top of cabinet	**8**	Hex Nut

Connect DC Power Distribution Unit Ground

1. Measure and cut a length of 6 AWG (#40) (4 mm^2) wire long enough to reach between the GROUND DISCHARGE bar in the DC power cabinet and the GRD connector on the DC-powered Distribution Unit. See ‘‘Ground for the DC-Powered Distribution Unit’’ on page 86.
2. At the cabinet, connect a the 6 AWG (#40) (16 4 mm^2) wire to the GROUND DISCHARGE bar.
3. Route the opposite end of the wire to the DC-powered Distribution Unit and connect the wire to the GRD connector.
4. Repeat Steps 2 and 3 for each remaining DC-powered Distribution Unit.

Ground for the DC-Powered Distribution Unit

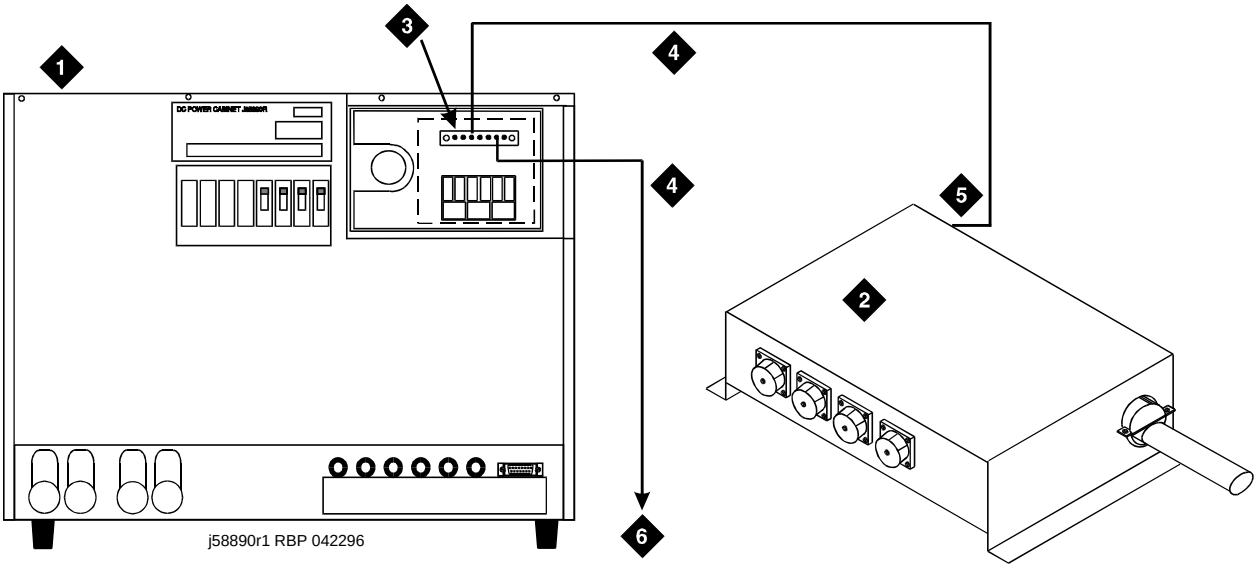


Figure notes

1 DC power cabinet

2 DC Power Distribution Unit

3 Ground Discharge Bar

4 6 AWG (#40) (4 mm2) Wire

5 GRD Connector Terminal on DC-Powered Distribution Unit

6 To Additional DC-Powered Distribution Units (if required)

Connect DC Power Cabinet Ground

1 Cut a length of 6 AWG (#40) (4 mm^2) wire long enough to reach between the GROUND DISCHARGE bar on the DC power cabinet and the single-point ground block on the expansion control media gateway A (bottom media gateway in ‘‘Ground for Media Gateway’’ on page 87).

2 At the DC power cabinet, connect the wire to the GROUND DISCHARGE bar.

3 Route the wire to expansion control media gateway A and connect to the single-point ground block.

4 Repeat for each expansion control media gateway A in the S8700 Multi-Connect configuration room.

Ground for Media Gateway

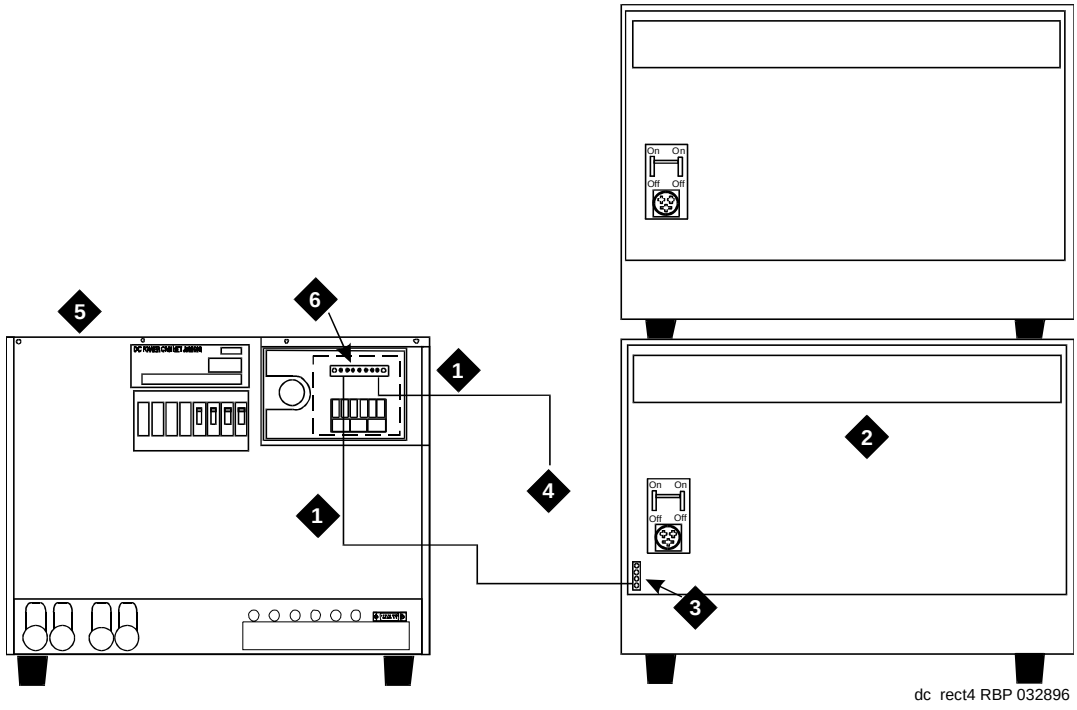


Figure notes

1. 6 AWG (#40) (4 mm2) Wire
2. Expansion Control Media Gateway A
3. Single-Point Ground Block
4. To Additional Expansion Control Media Gateways in Same Room
5. DC Power Cabinet
6. Ground Discharge Bar

Connect DC Power

Use the procedures in the following task list to connect DC power.

Task List: Connect the DC power

- ‘‘Connect AC Power to DC Power Cabinet’’ on page 91
- ‘‘Connect Battery Cabinet’’ on page 92
- ‘‘Connect Optional Battery Leads’’ on page 93

Making DC Power Connections

A 30 foot (9 m) cable connects to each cabinet. A special connector on one end of the cable is plugged into the cabinet power connector. The cable must be cut to length and terminated inside the J58890R DC power cabinet.

Each rectifier assembly can supply up to 50 amps of DC current. A minimum of two rectifiers are installed in each DC power cabinet to supply a total of 100 amps. A third rectifier assembly can be installed and is used as a backup (N+1). Each cabinet can pull up to 18 amps. Up to 3 DC power cabinets can be stacked to supply power to media gateway stacks.

‘‘Typical DC Power Connections’’ on page 89 shows a typical power and ground layout for a DC power system without a J58890CG DC Power Distribution Unit. The J58890CG is required if the distance between the DC Power cabinet(s) is greater than 30 feet (9 m). ‘‘Connections Using DC Power Distribution Unit’’ on page 90 shows a typical power and ground layout for a DC power system containing a DC power distribution unit.

DC Power Connections with DC Distribution Unit

A 10 foot (3 meter) power cord is equipped with the appropriate connectors. In the configuration shown in ‘‘Connections Using DC Power Distribution Unit’’ on page 90, each DC power cabinet stack has a DC Power Distribution Unit associated with it.

Stacking DC Power Cabinets

Up to 3 DC power cabinets can be stacked to supply power to media gateway stacks. See ‘‘DC Power Cabinet Stack — Rear’’ on page 91.

Typical DC Power Connections

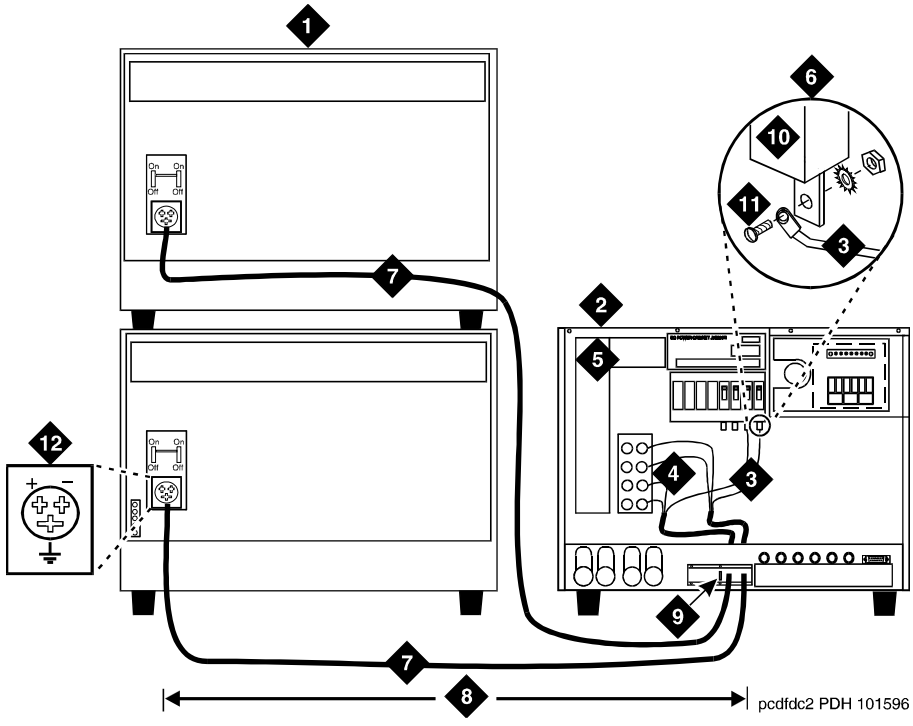


Figure notes

1 Media Gateway Stack

2 DC Power Cabinet

3 White Wires

4 Green Ground Wires and Black Wires Connect to the -48 VDC Return Bus

5 -48 VDC Bus

6 Connect White Wires to Circuit Breakers

7 DC Power Cable (H600-436, G1) to Power Connector on Each Media Gateway. Cut to Length and Crimp a Ring Terminal Onto Each Wire

8 30 Feet (9 m) Maximum

9 Route Cables Through Sliding Door

10 Circuit Breaker

11 Supplied #10-32 Screw, #10 Star Washer, and #10-32 Hex Nut

12 Inset Showing DC Power Connector (Male)

Connections Using DC Power Distribution Unit

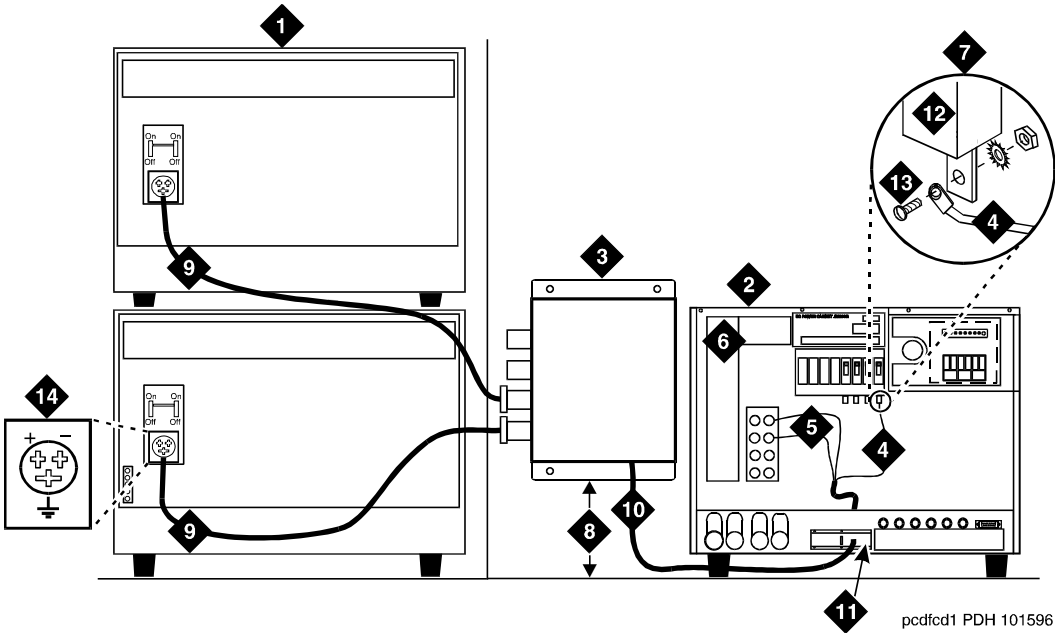


Figure notes

1 Media Gateway Stack

2 DC Power Cabinet

3 DC Power Distribution Unit (position to right of the media gateway stack

4 White Wire (connect to Circuit Breaker). See inset.

5 Green Ground Wires and Black Wire (connect to the -48 VDC Return Bus)

6 -48 VDC Bus

7 Inset

8 12 in. (30.5 cm) from floor to DC Power Distribution Unit

9 DC Power Cable to Power Connector on Each Media Gateway.

10 DC Power Distribution Unit Power Cord (route to rear of DC Power Cabinet)

11 Route Power Cord Through Sliding Door

12 Circuit Breaker

13 Supplied #10-32 Screw, #10 Star Washer, and #10-32 Hex Nut

14 Inset Showing DC Power Connector (Male)

DC Power Cabinet Stack — Rear

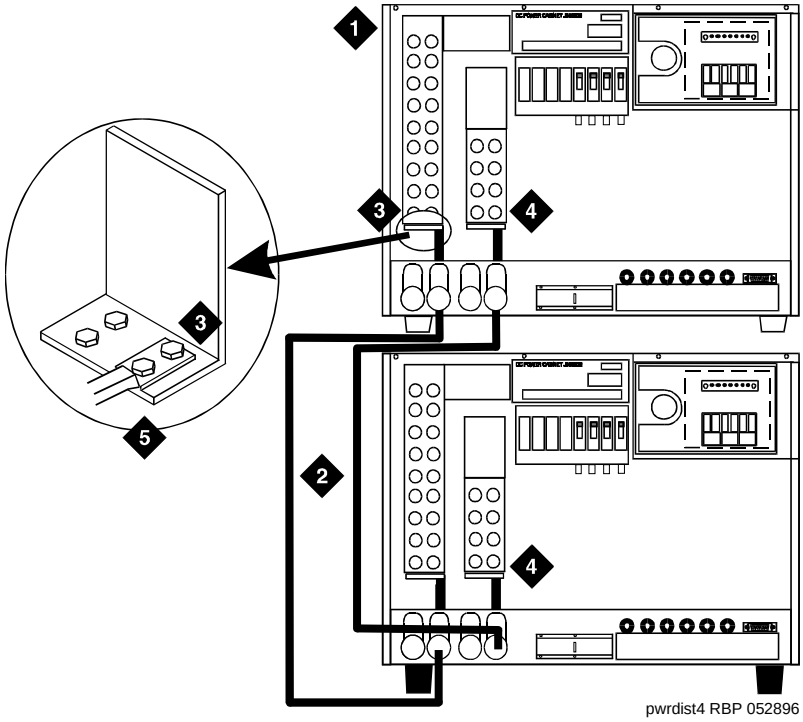


Figure notes

1. DC Power Cabinet Stack
2. DC Power Cables Daisy Chained Between DC Power Cabinets
3. Connect to -48 VDC Bus
4. Connect to -48 VDC Return Bus
5. Inset Applies to -48 VDC and -48 VDC Return Buses in All 3 DC Power Cabinets

Connect AC Power to DC Power Cabinet

CAUTION:
Power is present in the media gateway even if the AC power cable is unplugged. Turn off the main circuit breaker on the front of the media gateway when procedures require ALL power to be removed from the media gateway.

1. Ensure the associated circuit breakers at the AC power panel are OFF.
2. Have an electrician connect AC power leads to the rectifiers using the instructions provided with the rectifiers in the DC Power cabinet. Each rectifier should have its own branch circuit. Terminate leads on the AC INPUT terminal block of each rectifier.

Connect Battery Cabinet

CAUTION:
Power is present in the media gateway even if the AC power cable is unplugged. Turn off the main circuit breaker on the front of the media gateway when procedures require ALL power to be removed from the media gateway.

Connect the DC Battery cabinet to the DC Power cabinet.

‘‘DC Battery to DC Power cabinet Connections’’ on page 92 shows how to make typical connections from the DC Battery cabinet to the DC Power cabinet.

DC Battery to DC Power cabinet Connections

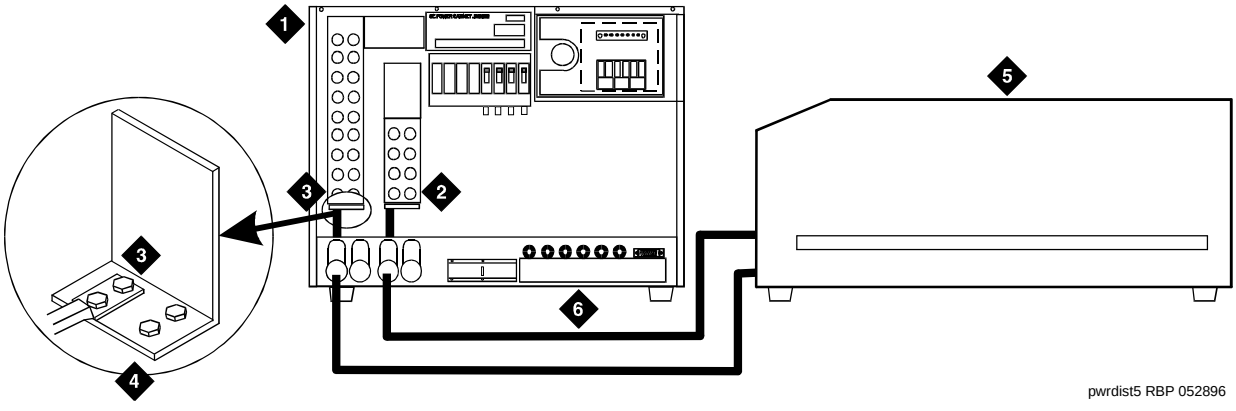


Figure notes

1 DC Power cabinet

2 Connect Red DC Power Cable to -48 VDC Return Bus

3 Connect Black DC Power Cable to -48 VDC Bus

4 Inset Applies to -48 VDC Buses and -48 VDC Return Buses

5 Battery cabinet

6 DC Power Cables (Red and Black)

Connect Optional Battery Leads

To prevent the internal batteries from discharging, the Control media gateway is shipped with the battery leads disconnected.

1. Set the circuit breakers OFF. See “Expansion Control Media Gateway Battery Location — Right Side” on page 93.
2. Connect the battery leads. The battery is near the top of the carrier toward the front-right. The battery leads are located next to the battery and are accessible from the front of the media gateway.

Expansion Control Media Gateway Battery Location — Right Side

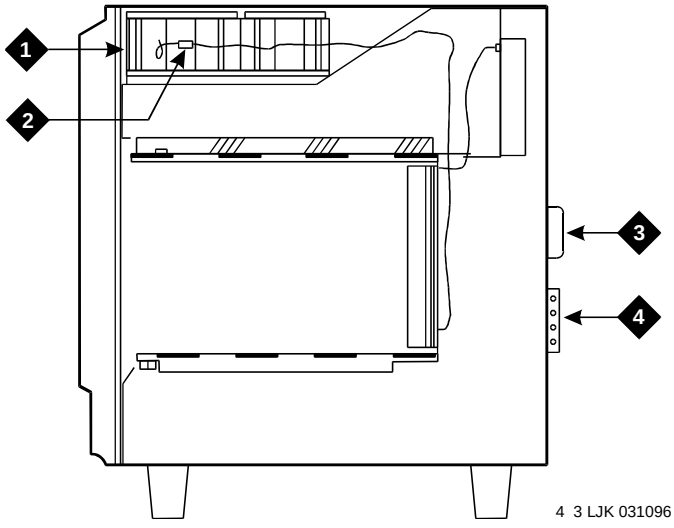


Figure notes

1. Battery
2. Battery Lead Connector
3. Circuit Breakers (Located Between plates)
4. Media Gateway Single-Point Ground Block

Ground and Connect AC-Powered Media Gateways

CAUTION:
S8700 Multi-Connect configuration grounding shall comply with the general rules for grounding contained in Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable code at the installation site.

NOTE:
Before connecting the media gateways to the approved ground, determine the best method of grounding. See Approved Grounds PDF for more information. Also, locate the approved ground as close to the media gateways as possible.

NOTE:
The ground plates and media gateway clips are installed later in this procedure.

Task List: Connect the AC Grounds

- ‘‘Connect AC-Power Ground’’ on page 94
- ‘‘Set the Ringer Frequency’’ on page 96
- ‘‘Connect the Power Cord into the Power Receptacle’’ on page 96

Connect AC-Power Ground

1. Measure and cut a length of 6 AWG (#40) (4 mm^2) wire long enough to reach between the media gateway stack single-point ground block and the approved ground. See ‘‘Typical AC Power and Ground Layout — Rear’’ on page 95.
2. At the lower left rear of the expansion control media gateway A, connect the 6 AWG (#40) (4 mm^2) ground wire to the media gateway stack single-point ground block.
3. Run the ground wire to the approved ground and attach securely.
4. Repeat Steps 1-3 for each expansion control media gateway A.

NOTE:
If the media gateway stacks are remotely located (in a separate room or building), run the 6 AWG (#40) (4 mm^2) media gateway ground wire to an approved protective ground.

5. At expansion control media gateway A, connect a 10 AWG (#25) (2.5 mm^2) wire to the single-point ground block. The 10 AWG (#25) (2.5 mm^2) wire must be long enough to reach the telecommunications cables at the rear of the media gateways, to follow these cables to the Main Distribution Frame (MDF), and to terminate at the Coupled Bonding Conductor (CBC).

The Coupled Bonding Conductor (CBC) wires are installed and terminated in ‘‘Cabling Port Networks’’ on page 116.

Typical AC Power and Ground Layout — Rear

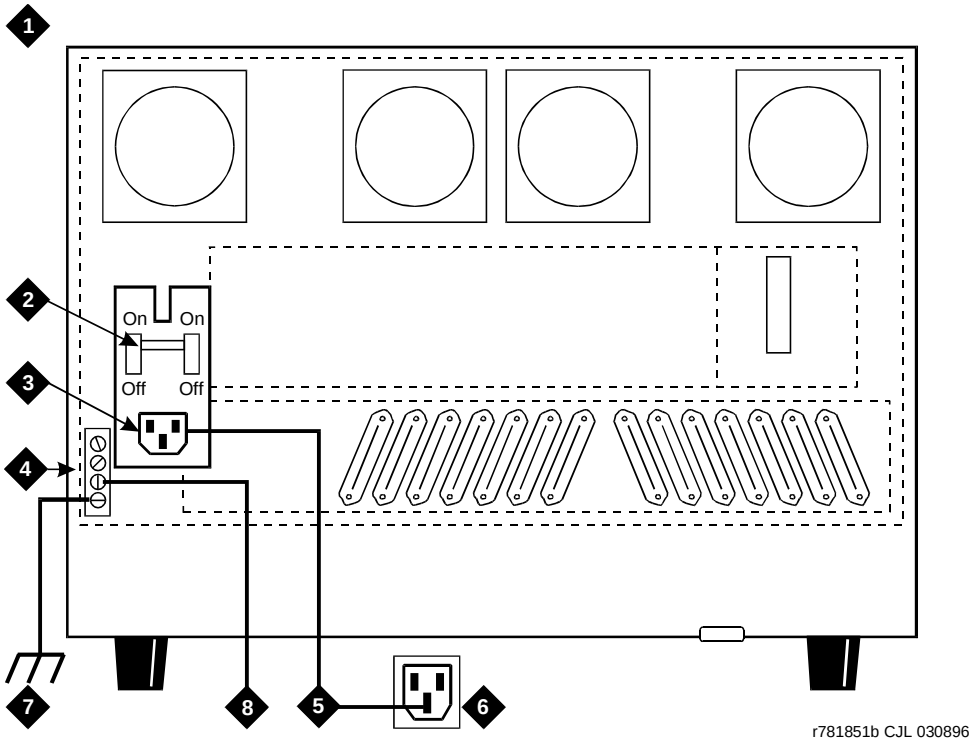


Figure notes

1 Expansion Control Media Gateway A in Stack 1

2 Circuit Breaker

3 AC Power Receptacle

4 Media Gateway Stack Single-Point Ground Block

5 8-foot (2.5 meters) Power Cord

6 National Electrical Manufacturers Association (NEMA) 5-15 or 5-20 Receptacle or Equivalent

7 6 AWG (#40) (4 mm2) Ground Wire to Approved Ground

8 10 AWG (#25) (2.5 mm2) Wire to Coupled Bonding Conductor

Set the Ringer Frequency

CAUTION:
When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

The default ringer frequency setting on the 1217A power supply for North America is 20 Hz and the international setting can be either 20 Hz or 25 Hz. To set the ringer frequency on the 1217A power supply:

1. Power down AUDIX and any other circuit pack that might be running an application.
2. Power down the media gateway.
3. Release both latches on the power supply and slide the unit out of the media gateway.
4. Observe the ring frequency switch label on the side of the power supply and locate the switch on the bottom.
5. Set the ring frequency select switch to the appropriate frequency setting.
6. Slide the power supply back into the slot and ensure that both latches snap closed.

Connect the Power Cord into the Power Receptacle

1. Provide one receptacle per media gateway.
2. Verify that the circuit breakers are OFF.
3. Plug the media gateway AC power cord into the AC power receptacle on the rear of each media gateway.
4. Plug the opposite end of each AC power cord into the appropriate AC power receptacle in the equipment room.

NOTE:
Loop the excess cord and tie wrap it to the back cover to prevent accidental unplugging.

Connect Time Division Multiplexing Bus Cables

1. Locate the white fabric-covered Time Division Multiplexing (TDM) bus cable on the rear of the media gateways.
2. Remove the TDM Bus Terminator from Slot 18 of the expansion control media gateway A (J58890N) and move it to Slot 17 on port media gateway B (J58890H). See ‘‘Connections for Media Gateway Stacks’’ on page 97.
3. Connect the supplied TDM Bus Cables (WP-91716 L3) as shown.
4. Repeat for each port media gateway in the stack.

Connections for Media Gateway Stacks

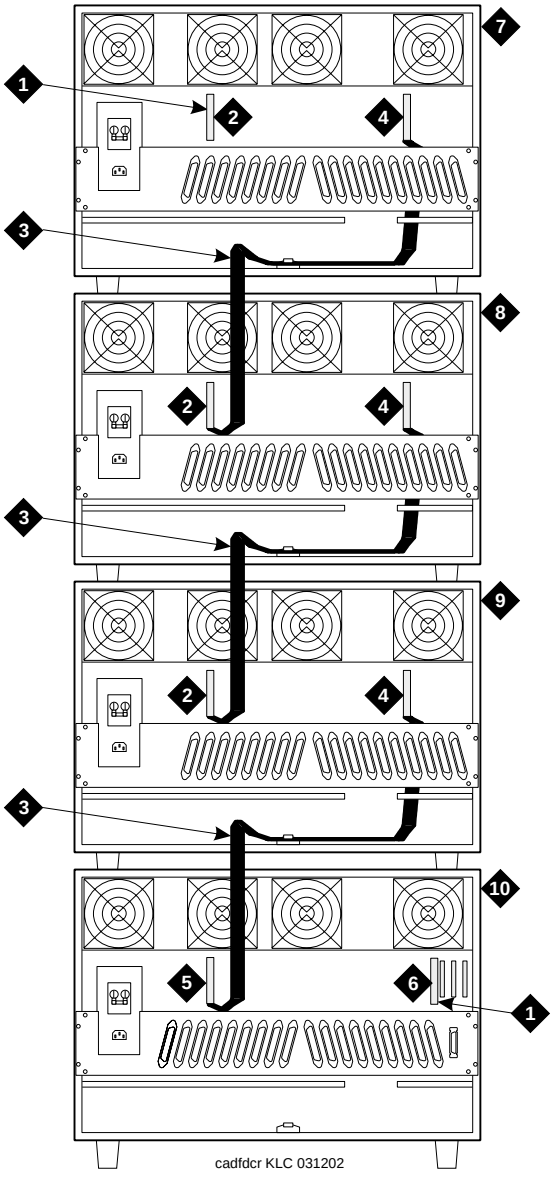


Figure notes

1 AHF110 TDM Bus Terminator

2 TDM/Local Area Network (TDM/LAN) Pinfield (Slot 17)

3 TDM bus Cable (WP-91716 L3)

4 TDM/Local Area Network (TDM/LAN) Pinfield (Slot 00)

5 AHF110 TDM Bus Terminator (Slot 17)

6 AHF110 TDM Bus Terminator

7 Port Media Gateway D

8 Port Media Gateway C

9 Port Media Gateway B

10 Expansion Control Media Gateway A

Verify Port Media Gateway Address Plugs

The address plug is a jumper field on port media gateways (J58890H) only. The address plug is located on the far right hand side of the backplane, to the right of slot 00.

A group of six pins is labeled for the media gateway (carrier) jumper connections. Verify that the address plug for *each* port carrier is in the correct location for that carrier. See ‘‘Port Media Gateway Address Plug Location — Rear of Media Gateway’’ on page 98. The factory default setting is “B” (callout 2).

Port Media Gateway Address Plug Location — Rear of Media Gateway

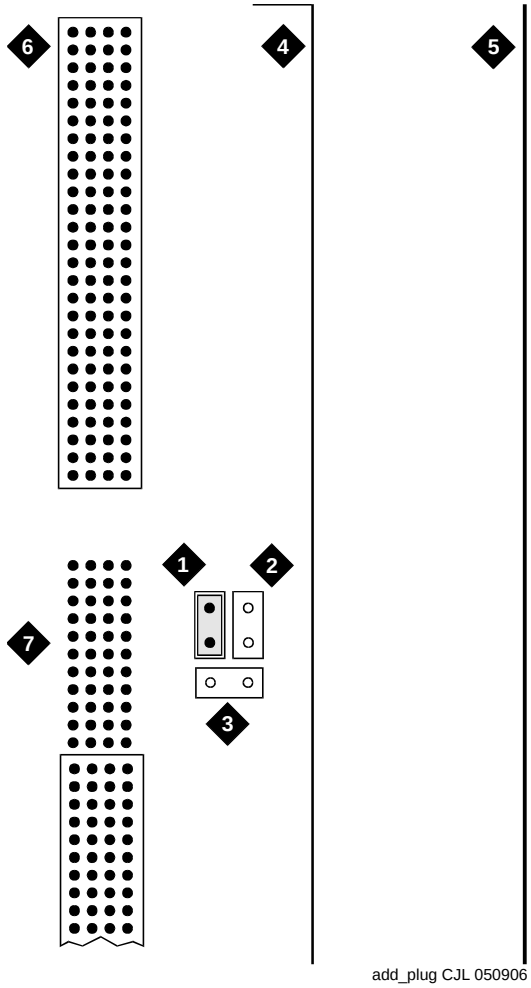


Figure notes

1	Address Plug (shown set to carrier D)	**5**	Right Edge of Media Gateway
2	Carrier B Jumper Location (Default)	**6**	Backplane Slot 00
3	Carrier C Jumper Location	**7**	To Connector Panel
4	Right Edge of Backplane		

Install Rear Panels

1. Install the rear panels and loosely thread each screw. See ‘‘Rear Panel Screw Locations’’ on page 99.
2. For *un-stacked* media gateways, tighten the screws securely.

   For a *stack* of media gateways, allow the screws labeled callout 4 to remain loose. These screws are tightened when the ground plates are installed.
3. Be sure the Time Division Multiplexing (TDM) bus cables and the Inter-Cabinet Cables (ICC) are not pinched by the panels. Also be sure the cables are routed through the channels provided on the rear panels.

Rear Panel Screw Locations

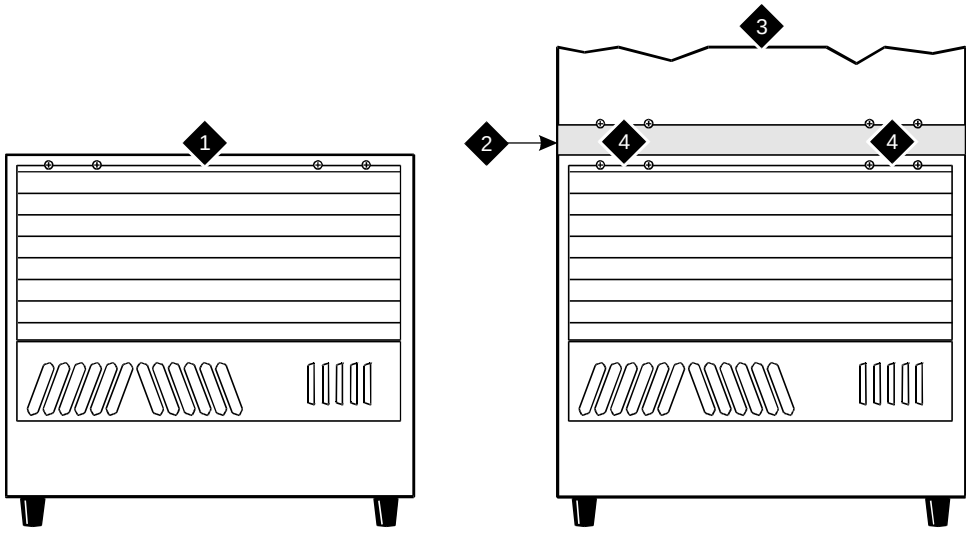


Figure notes

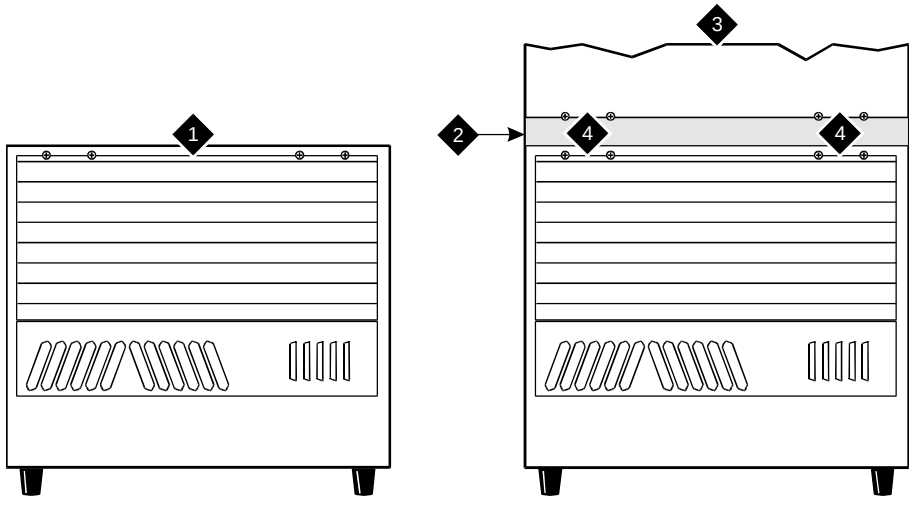
1. Expansion Control Media Gateway A (No ground plate is installed on an un-stacked media gateway)
2. Rear Ground Plate (attached between stacked media gateways)
3. Port Media Gateway B
4. Screws to Loosen

Install Rear Ground Plates (Media Gateways with Earthquake Protection)

Ground plates are installed between stacked media gateways, provide the ground connection between media gateways, provide radio frequency (RF) radiation protection, and help stabilize the media gateways.

1. Loosen the four screws at the bottom of the top media gateway and at the top of the media gateway underneath it. See ‘‘Rear Panel Screw Locations’’ on page 99.
2. Align the mounting holes in the rear ground plate over the bottom screws in the top media gateway. See ‘‘Rear Ground Plate and Front Plate or Media Gateway Clip — Side View’’ on page 101.
3. Align the mounting holes in the ground plate with the four holes at the top of the media gateway below the top media gateway. Slide the mounting plate down to seat on the screws.
4. Check all Time Division Multiplexing (TDM) bus cables and the Inter- Cabinet Cables (ICC) to be sure they are not pinched by the plates.
5. Repeat Steps 1-3 until the rear ground plates are installed between all stacked media gateways.
6. Do not tighten the screws yet.

Rear Panel Screw Locations



grnd_plt CJL 030696

Figure notes

1. Expansion Control Media Gateway A (No ground plate is installed on an un-stacked media gateway)
2. Rear Ground Plate (attached between stacked media gateways)
3. Port Media Gateway B
4. Screws to Loosen

Rear Ground Plate and Front Plate or Media Gateway Clip — Side View

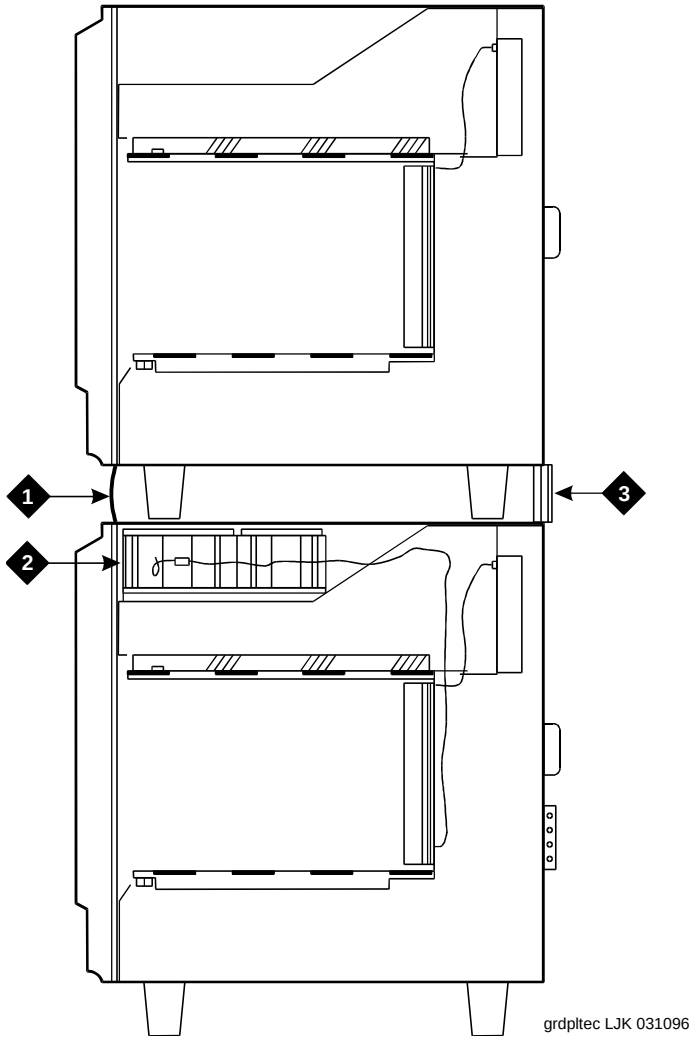


Figure notes

1 Front Ground Plate or Media Gateway Clip

2 Battery

3 Rear Ground Plate

Install Front Ground Plates (Media Gateways with Radiation Shielding and Earthquake Protection)

Ground plates are installed between stacked media gateways, provide the ground connection between media gateways, provide radio frequency (RF) radiation protection, and help stabilize the media gateways.

Use the front ground plate instead of the media gateway clip to attach the media gateways to each other. Use one front ground plate between two *stacked* media gateways.

1. At the front of the media gateways, align the holes in the top of the front ground plate with the holes at the bottom of the upper media gateway, and insert the four screws. Do not tighten the screws yet. See ‘‘Rear Ground Plate and Front Plate or Media Gateway Clip — Side View’’ on page 101.
2. At the front of the media gateways, align the holes in the bottom of the front ground plate with the holes at the top of the lower media gateway. Insert the four supplied #12-24 x 1/2-inch (1.27 cm) thread-forming screws. Do not tighten the screws yet.
3. Repeat Steps 1 and 2 until all stacked media gateways are fastened together.
4. Tighten all screws securely.

Rear Ground Plate and Front Plate or Media Gateway Clip — Side View

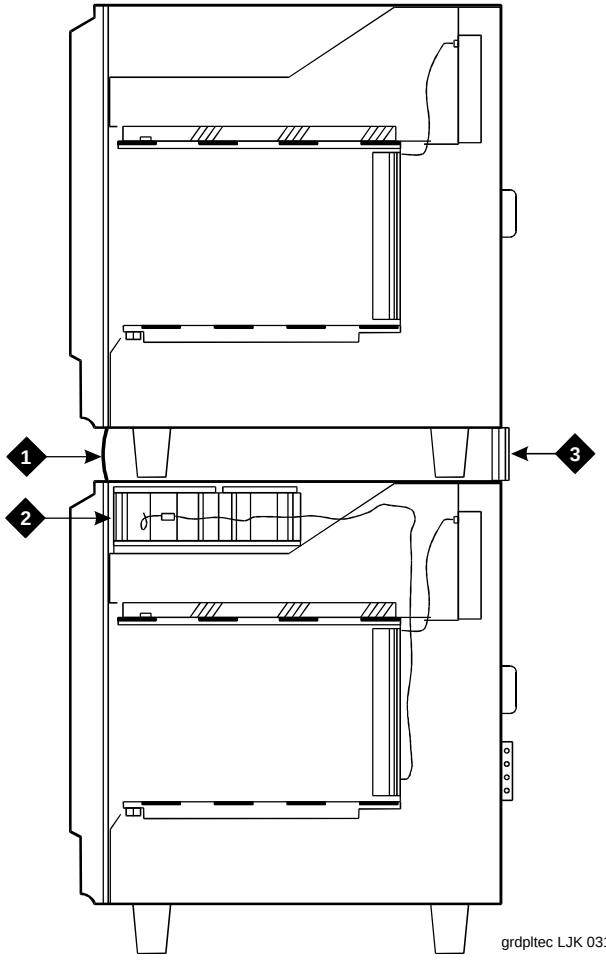


Figure notes

1. Front Ground Plate or Media Gateway Clip
2. Battery
3. Rear Ground Plate

Install Media Gateway Clips (Media Gateways without Earthquake Protection)

A media gateway clip is required between each pair of stacked media gateways.

At the front of the media gateways, install a media gateway clip between each pair of media gateways by hooking the clip into the slot of the upper media gateway and snapping the straight leg of the clip into the slot on the lower media gateway. See ‘‘Location of Media Gateway Clips’’ on page 103.

Location of Media Gateway Clips

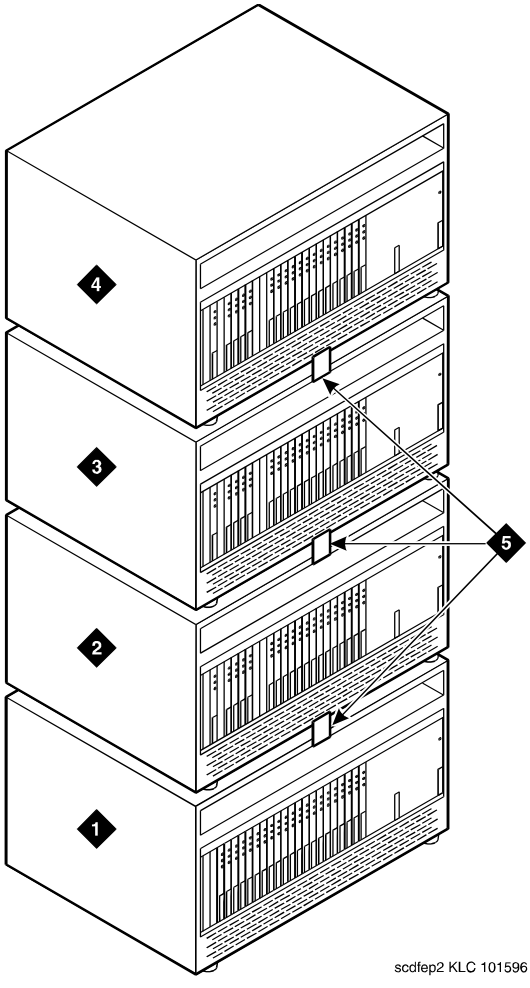


Figure notes

1. Expansion Control Media Gateway A
2. Port Media Gateway B
3. Port Media Gateway C
4. Port Media Gateway D
5. Media Gateway Clips

Connect S8700 Multi-Connect configuration Cables

1 Connect the cables for port networks (PNs) as shown in “Connections for Media Gateway Stacks’’ on page 97.

NOTE:
The fiber optic cables are connected to the Main Distribution Frame (MDF) in “Cabling Port Networks’’ on page 116.

2 Connect the fiber optic cable.

The “Inter-Cabinet Cable Running List is provided with the S8700 Multi-Connect configuration.” Each row on the list represents a cable connection. Use the running list to determine where to connect each fiber optic cable.

CAUTION:
Do not route fiber optic cables and the B25A cables together.

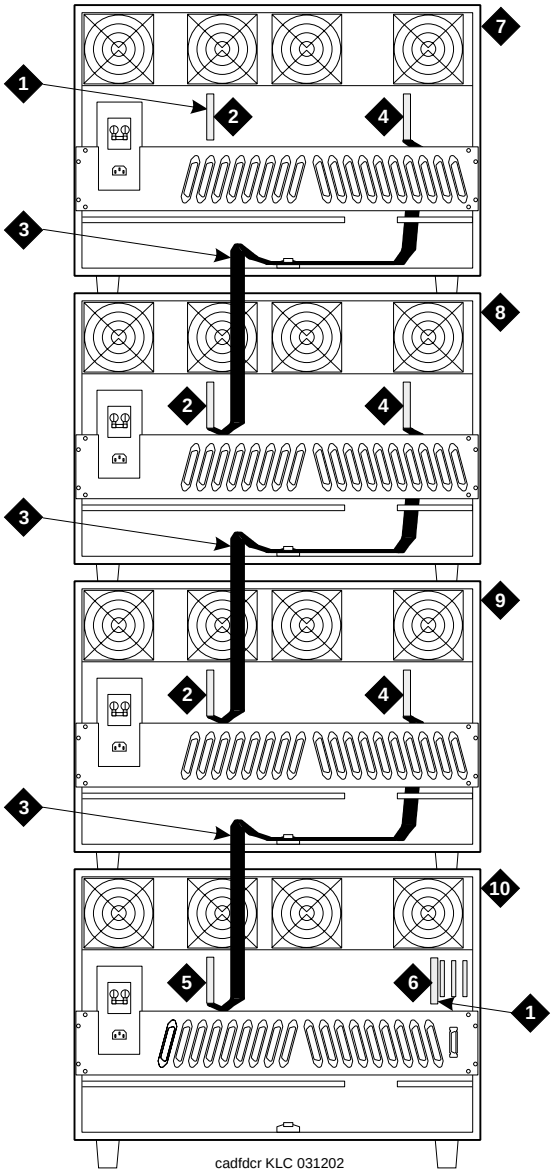


Figure notes

1 AHF110 TDM Bus Terminator (Slot 17)

2 TDM/Local Area Network (TDM/LAN) Pinfield (Slot 17)

3 TDM bus Cable (WP-91716 L3)

4 TDM/Local Area Network (TDM/LAN) Pinfield (Slot 00)

5 TDM/Local Area Network (TDM/LAN) Pinfield (Slot 17)

6 AHF110 TDM Bus Terminator (Slot 01)

7 Port Media Gateway D

8 Port Media Gateway C

9 Port Media Gateway B

10 Expansion Control Media Gateway A

Installing an Avaya G700 Media Gateway

A Avaya G700 Media Gateway may be controlled by an S8700 Media Server for Multi-Connect configurations. A sample configuration is shown below.

For complete information on tasks and procedures required refer to *Installation and Upgrades for Avaya™ G700 Media Gateway controlled by an Avaya S8700 Media Server.* Document number 555-234-100.

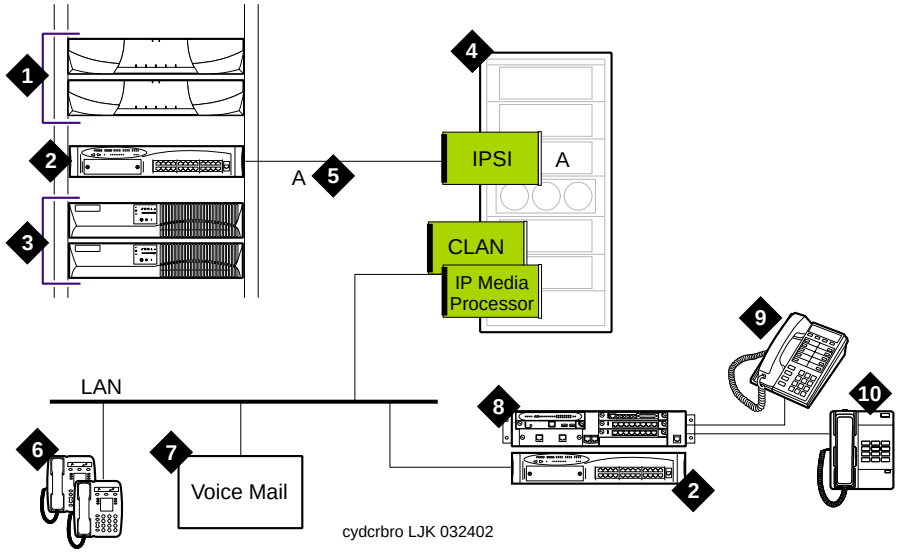


Figure notes

1. S8700 Media Servers in a Multi-Connect Configuration
2. Ethernet Switch
3. UPS units: One for each media server.
4. MCC1 Media Gateway
5. Dedicate LAN connectivity to IPSI board in the MCC1 Media Gateway
6. IP Phones off of the customer's LAN
7. Voice Mail: Connected via IP
8. G700 Media Gateway connected via the LAN to the TN799DP C-LAN board located in the MCC1 Media Gateway
9. DCP Phones: Avaya Multi-Function Digital Phones
10. Analog connectivity: Analog phones, lines and trunks.

Install the Stratum 3 clock

1. “Unpack and Inspect Stratum 3 Clock Cabinet’’ on page 107
2. “Install and Position Stratum 3 Clock Cabinet’’ on page 107
3. “Connect AC Power to Stratum 3 Clock Cabinet’’ on page 107
4. “Check and Connect Commercial AC Power’’ on page 108
5. “Connect DC Power and Ground to Stratum 3 Clock Cabinet’’ on page 108
6. “Connect Clock Cabinet Grounding’’ on page 108
7. “Connect Stratum 3 Clock DC Power’’ on page 108
8. “Set the Clock Options’’ on page 109
9. “Cable the Stratum 3 Clock’’ on page 110
10. “Install the Stratum 3 Clock Wiring’’ on page 112

Unpack and Inspect Stratum 3 Clock Cabinet

1. Check the status of the SHOCKWATCH and/or TILTWATCH indicators on the cardboard container. If the container has been jarred or tilted beyond specifications, the indicators are red, indicating possible damage.
2. Remove all packing material.
3. Remove front door and rear screw-on panels from the cabinet.
4. Inspect the cabinet for damage. Report any damage per local instructions.

Install and Position Stratum 3 Clock Cabinet

Check the location of the AC power receptacle. The receptacle must be on a separately fused circuit that is not controlled by a wall switch. It must be located within 10 ft. (3 m) of the cabinet and should be located outside the MDF area.

1. Position the clock cabinet in the designated location.
2. If earthquake protection is required, skip to“Install Earthquake Protection for Avaya SCC1 Media Gateway’’ on page 80 or “Install Earthquake Protection for Media Gateway’’ on page 46
3. If earthquake protection is not required, level the cabinets and adjust and lock the cabinet stabilizing bolts to keep the cabinet from moving.

Connect AC Power to Stratum 3 Clock Cabinet

The clock cabinet requires a 120 VAC, 15 amp receptacle. The green wire ground provided by the receptacle is sufficient. The clock cabinet does not require a ground connection back to the single-point ground.

Check and Connect Commercial AC Power

Before powering up the S8700 Multi-Connect configuration, check the AC power using a KS-20599 digital voltmeter (DVM) (or equivalent).

1. Set the DVM to the 250 volt range.
2. Carefully measure the voltage between the hot and neutral side of the receptacle. The neutral wire is white, the hot wire is black.
3. Verify the meter reads 106 to 128 VAC. If not, have a qualified electrician correct the problem.
4. Measure the voltage between the neutral and ground side of the receptacle. The ground wire is green.
5. Verify the meter reads 0 VAC. If not, have a qualified electrician correct the problem.
6. Set all cabinet power modules OFF. Plug the AC power cable into the receptacle.

Connect DC Power and Ground to Stratum 3 Clock Cabinet

Provide power for the clock cabinet from the same DC power plant as the S8700 Media Server for Multi-connect configuration.

Ground the clock cabinet to the DC power plant.

Connect Clock Cabinet Grounding

1. Measure and cut a 6 AWG (#40) (16 mm^2) wire long enough to reach from the clock cabinet to the ground discharge bar in the DC power plant.
2. Insert 1 end of the wire into the ground lug on the clock cabinet and tighten the screw.
3. Attach the lug to the receptacle cover. Be sure the lug and cabinet ground wires connect to separate screws on the receptacle cover.
4. Route the ground wire to the DC power plant and connect to DISCH GRD inside the cabinet.

Connect Stratum 3 Clock DC Power

1. Set the clock cabinet circuit breaker at the DC power plant OFF.
2. At the clock cabinet, connect a 6 AWG (#40) (16 mm^2) ground wire to the -48V terminal on the terminal strip.
3. At the clock cabinet, connect a 6 AWG (#40) (16 mm^2) wire to the -48VRTN terminal on the terminal strip.
4. Route the wires out of the cabinet and to the DC power plant.
5. At the DC power plant, connect the -48V wire to the DC OUTPUT circuit breaker.
6. At the DC power plant, connect the -48VRTN wire to the DISCH GRD bar.

Set the Clock Options

There are four sets of option switches on the clock.

1. Set the options on the Clock Input (CI) circuit pack according to ‘‘CI Option Switch Settings’’ on page 109.
2. Set the options on the Stratum 3 Clock (ST3) circuit pack according to ‘‘ST3 Clock Circuit Pack Option Switch Settings’’ on page 109.
3. Set the options on the Composite Clock Timing Output (TOCA) circuit pack according to ‘‘Composite Clock Timing Output (TOCA) Circuit Pack’’ on page 110.
4. Set the Stratum 2/Stratum 3 switch to the STRATUM 3 position.

CI Option Switch Settings

Switch	Function	Position
1	T1 Select	OFF = enable (default) ON = disable
2	CC Select	OFF = enable ON = disable (default)
3	Framing Select	OFF = ESF ON = D4 (default)
4	BX.25	OFF = enable ON = disable (default)

ST3 Clock Circuit Pack Option Switch Settings

Switch	Status/Results
SW1 Minor Alarm Control	OFF = minor alarm never output ON = minor alarm is output if holdover occurs
SW2 Major Alarm Control	OFF = major alarm is output and fail lamp lights if 5 VDC power is lost and 4 kHz output is lost ON = major alarm is output and fail lamp lights if 5 VDC power is lost and 4 kHz output is lost and holdover occurs

NOTE:
Only SW 1 and SW2 are used. SW1 controls the output of alarm signals from the Stratum 3 Clock circuit pack.

Composite Clock Timing Output (TOCA) Circuit Pack								
Switch		**Range**						
500	**1000**	**1 ft. (0.3 m)**	**500 ft. (152 m)**	**1000 ft. (305 m)**	**1500 ft. (457 m)**	**2000 ft. (610 m)**	**2500 ft. (762 m)**	**3000 ft. (914 m)**
OFF	OFF	<----------						
ON	OFF		<----------					
OFF	ON			<----------				
ON	ON				<----------			

NOTE:
Set switches 1 and 2 according to the distance from the Stratum 3 clock to the S8700 Media Server for Multi-connect configuration. Set switch 3 to ON. Set switch 4 to OFF.

Cable the Stratum 3 Clock

‘‘Typical Connections to Stratum 3 Clock’’ on page 111 shows typical connections to a Stratum 3 Clock cabinet. Connections are made through the yellow field cross-connect. A custom “Y” cable (H600-274) connects the CSU to the DS1 circuit pack and taps off the input for the Stratum 3 Clock. A resistor built into the cable to provide the necessary isolation between the S8700 Multi-Connect configuration and the clock. The “Y” cable plugs directly into the CSU and connects to standard cables for interface to the S8700 Multi-Connect configuration and the yellow field on the MDF.

The H600-307 cable connects the S8700 Multi-Connect configuration end of the “Y” cable to a DS1 circuit pack (shown as TN464/2464, TN722, or TN767). The B25A cable connects the clock end of the “Y” cable to the yellow field on the MDF.

Typical Connections to Stratum 3 Clock

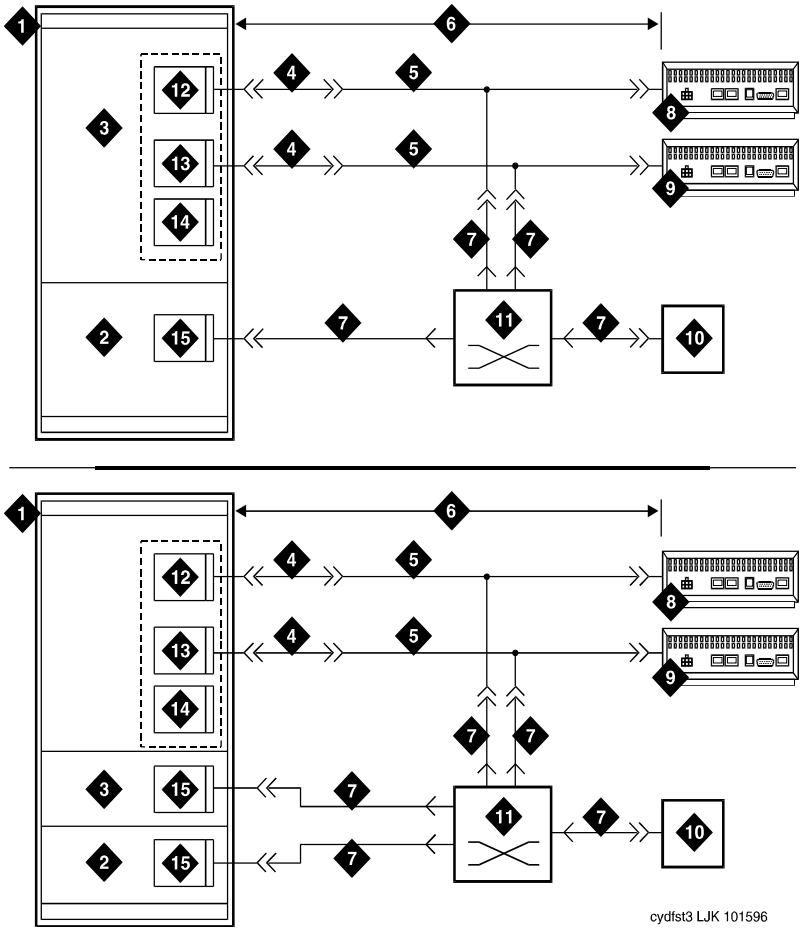


Figure notes

1 SCC1 Cabinet (PN)
2 “A” Position
3 “B” Position
4 H600-307 Cable
5 H600-247 G2 Cable
6 1300 Feet (396 m)
7 B25A (Male-to-Female) Cable
8 Channel Service Unit (Secondary)
9 Channel Service Unit (Primary)
10 Stratum 3 Clock
11 Main Distribution Frame (MDF)
12 DS1/E1 Interface Circuit Pack
13 DS1 Tie Trunk Circuit Pack
14 DS1 Interface Circuit Pack
15 Tone-Clock Circuit Pack

Install the Stratum 3 Clock Wiring

1. Connect the B25A cables from the TN780 connector panel slot on the S8700 Multi-Connect configuration cabinet and the Stratum 3 Clock to the cross-connect module in the yellow field.
2. Connect the CSU plug end of the H-600-274 (Y) cable to the primary CSU. Route an H600-307 cable from the DS1 connector panel slot on the S8700 Multi-Connect configuration cabinet to the connector on the "S8700 Multi-Connect configuration" end of the "Y" cable.
3. Route a B25A cable from the "CLOCK" end of the "Y" cable to the cross-connect module in the yellow field.
4. Repeat steps 2 and 3 for the secondary CSU. The maximum allowable cabling distance between the Stratum 3 clock and the CSU is shown in ''Maximum Cabling Distance'' on page 112.
5. For standard reliability configurations, refer to ''Cross-Connects for Standard Reliability'' on page 113 to cross-connect the TN780 and "CLOCK" end connections to the Stratum 3 Clock connections on the cross-connect module.
6. For high or critical reliability configurations, refer to ''Cross-Connects for High or Critical Reliability'' on page 114 to cross-connect the TN780 and "CLOCK" end connections to the Stratum 3 Clock connections on the cross-connect module.
7. The common cross-connection from the TN780 in A and B carriers to the Stratum 3 Clock should be done by bridging the jumper wires.
8. Dress the cables down sides of the cabinet and run through the Cable Slack Manager, if provided.
9. Administer per the *Administrator's Guide for Avaya MultiVantage*™.

Maximum Cabling Distance

Channel Service Unit (CSU)	Maximum Cabling Distance
551A	85 Feet (26 m)
551V	85 Feet (26 m)
551V EFS/R	655 Feet (199.6 m)
EFS T1	655 Feet (199.6 m)

Cross-Connects for Standard Reliability					
From: Stratum 3 Clock			To: Y Cable Clock End (Primary)		
Lead Designation	Lead Color	Connecting Block Terminal	Lead Designation	Lead Color	Connecting Block Terminal
RREF1	W-BL	1		V-O	43
TREF1	BL-W	2		O-V	44
			To: Y Cable Clock End (Secondary)		
RREF2	W-O	3		V-O	43
TREF2	O-W	4		O-V	44
			To: Tone-Clock Carrier A		
BCLKRTN	R-O	13	ALRM5B	V-G	45
BCLKLST	O-R	14	ALRM5A	G-V	46
BPWRRTN	R-BR	17	ALRM4B	BK-BL	21
BPWRLST	BR-R	18	ALRM4A	BL-BK	22
REF2RTN	W-BR	7	ALRM3B	R-BR	17
REF2LST	BR-W	8	ALRM3A	BR-R	18
SCLKRTN	R-BL	11	ALRM2B	R-BL	11
SCLKLST	BL-R	12	ALRM2A	BL-R	12
SPWRRTN	R-G	15	ALRM1B	Y-BL	31
SPWRLST	G-R	16	ALRM1A	BL-Y	32
REF1RTN	W-G	5	ALRM0B	W-BR	7
REF1LST	G-W	6	ALRM0A	BR-W	8
CCA01R	R-S	19	EXTSYN0T	V-BL	41
CCA01T	S-R	20	EXTSYN0R	BL-V	42
CCB01R	BK-BL	21	EXTSYN1T	Y-G	35
CCB01T	BL-BK	22	EXTSYN1R	G-Y	36

Cross-Connects for High or Critical Reliability

From: Stratum 3 Clock			To: Y Cable Clock End (Primary)					
Lead Designation	**Lead Color**	**Connecting Block Terminal**	**Lead Designation**	**Lead Color**	**Connecting Block Terminal**			
RREF1	W-BL	1		V-O	43			
TREF1	BL-W	2		O-V	44			
			To: Y Cable Clock End (Secondary)					
	W-O	3		V-O	43	Lead Designation	Lead Color	Connecting Block Terminal
	O-W	4		O-V	44			
						To: Tone-Clock Carrier B		
			ALRM5B			ALRM5B	V-G	45
			ALRM5A			ALRM5A	G-V	46
BPWRRTN	R-BR	17	ALRM4B	BK-BL	21	ALRM4B	BK-BL	21
BPWRLST	BR-R	18	ALRM4A	BL-BK	22	ALRM4A	BL-BK	22
REF2RTN	W-BR	7	ALRM3B	R-BR	17	ALRM3B	R-BR	17
REF2LST	BR-W	8	ALRM3A	BR-R	18	ALRM3A	BR-R	18
SCLKRTN	R-BL	11	ALRM2B	R-BL	11	ALRM2B	R-BL	11
SCLKLST	BL-R	12	ALRM2A	BL-R	12	ALRM2A	BL-R	12
SPWRRTN	R-G	15	ALRM1B	Y-BL	31	ALRM1B	Y-BL	31
SPWRLST	G-R	16	ALRM1A	BL-Y	32	ALRM1A	BL-Y	32
REF1RTN	W-G	5	ALRM0B	W-BR	7	ALRM0B	W-BR	7
REF1LST	G-W	6	ALRM0A	BR-W	8	ALRM0A	BR-W	8

Cross-Connects for High or Critical Reliability					
From: Stratum 3 Clock			To: Y Cable Clock End (Primary)		
Lead Designation	Lead Color	Connecting Block Terminal	Lead Designation	Lead Color	Connecting Block Terminal
CCA01R	R-S	19	EXTSYN0T	V-BL	41
CCA01T	S-R	20	EXTSYN0R	BL-V	42
CCB01R	BK-BL	21	EXTSYN1T	Y-G	35
CCB01T	BL-BK	22	EXTSYN1R	G-Y	36
CCA02R	BK-O	23	EXTSYN0T	V-BL	41
CCA02T	O-BK	24	EXTSYN0R	BL-V	42
CCB02R	BK-G	25	EXTSYN1T	Y-G	35
CCB02T	G-BK	26	EXTSYN1R	G-Y	36

Cabling Port Networks

This section provides both *information about* installing the telecommunications cabling and *procedures* for doing the installation.

Information about Installing the Cabling

- ‘‘Provisioning Plan’’ on page 118
- ‘‘Main Distribution Frame (MDF) Hardware’’ on page 119
- ‘‘MDF Cross-Connect Fields’’ on page 122
- ‘‘Main Distribution Frame’’ on page 123
- ‘‘Main Distribution Frame Labels’’ on page 125
- ‘‘Off-Premises Circuit Protection’’ on page 126
- ‘‘Cable Installation’’ on page 128
- ‘‘Sneak Fuse Panels’’ on page 127
- ‘‘Coupled Bonding Conductor’’ on page 133
- ‘‘Installation Space Requirements’’ on page 134 for the sneak fuse panels, the 110-type hardware, and the Cable Slack Manager
- ‘‘Station Wiring Design’’ on page 135
- ‘‘Station Circuit Distribution from Equipment Room’’ on page 140
- ‘‘Layout’’ on page 148
- ‘‘Patch Cord/Jumper Installation and Administration’’ on page 150

Installing the Telecommunications Cabling

1. “Label Expansion Control Carrier Cable’’ on page 152
2. “Connect Expansion Control Carrier Outputs Cable’’ on page 153
3. “Connect Trunk Pairs Using Concentrator Cables’’ on page 153
4. “Connect Trunk Pairs to Media Gateway Using Jumper Wires To Establish 3-Pair Modularity’’ on page 154
5. “Install Cables Between Media Gateway and MDF’’ on page 156
6. “Install Connector Cables Between Auxiliary Cabinet and MDF’’ on page 157
7. “Mount 110A- or 110P-type terminal blocks on the wall’’ on page 158 or “Mount 110P-type terminal blocks on a frame’’ on page 160
8. “Install Cable Slack Managers’’ on page 162
9. “Install Sneak Fuse Panels’’ on page 164
10. “Install Coupled Bonding Conductor’’ on page 166

Provisioning Plan

A provisioning plan should be completed prior to an installation. The plan determines an appropriate available port circuit on the S8700 Multi-Connect configuration for each telephone, trunk, and peripheral connection needed, and any auxiliary power for Basic Rate Interface (BRI) and certain display sets.

The Port Assignment Record must have this information:

- Station or trunk type or feature/service
- Building location (floor/room/desk/outlet)
- Extension number or trunk group and member number
- Port circuit location on the S8700 Multi-Connect configuration for each endpoint (media gateway/carrier/slot/circuit)
- Route from equipment room through equipment closets to each endpoint
- Auxiliary power supply, if required

Main Distribution Frame (MDF) Hardware

SYSTIMAX 110-type hardware is used for the Main Distribution Frame (MDF). 110-type hardware is available in two basic types: the 110A and 110P. The 110A requires less wall space than the 110P. The 110P includes horizontal and vertical cable troughs for managing cross-connect cables. The S8700 Multi-Connect configuration is connected to the MDF with the supplied B25A male to female 25-pair cables. The cables are provided in 10-foot (3 m) and 15-foot (4.5 m) lengths.

Refer to *DEFINITY Communications System Generic 1 and Generic 3 Main Distribution Field Design*, 555-230-630, for more information.

‘‘Example MDF Connections (Avaya SCC1 Media Gateway)’’ on page 120 shows a detailed example of the SCC1 media gateway cables connecting media gateways and satellite closets to the Main Distribution Frame (MDF). The figure shows the cross-connections for one example station circuit.

‘‘Example MDF Connections (Avaya MCC1 Media Gateway)’’ on page 121 shows the cross-connections for common circuit packs. Refer to this figure when cross-connecting wire pairs to the MDF.

Example MDF Connections (Avaya SCC1 Media Gateway)

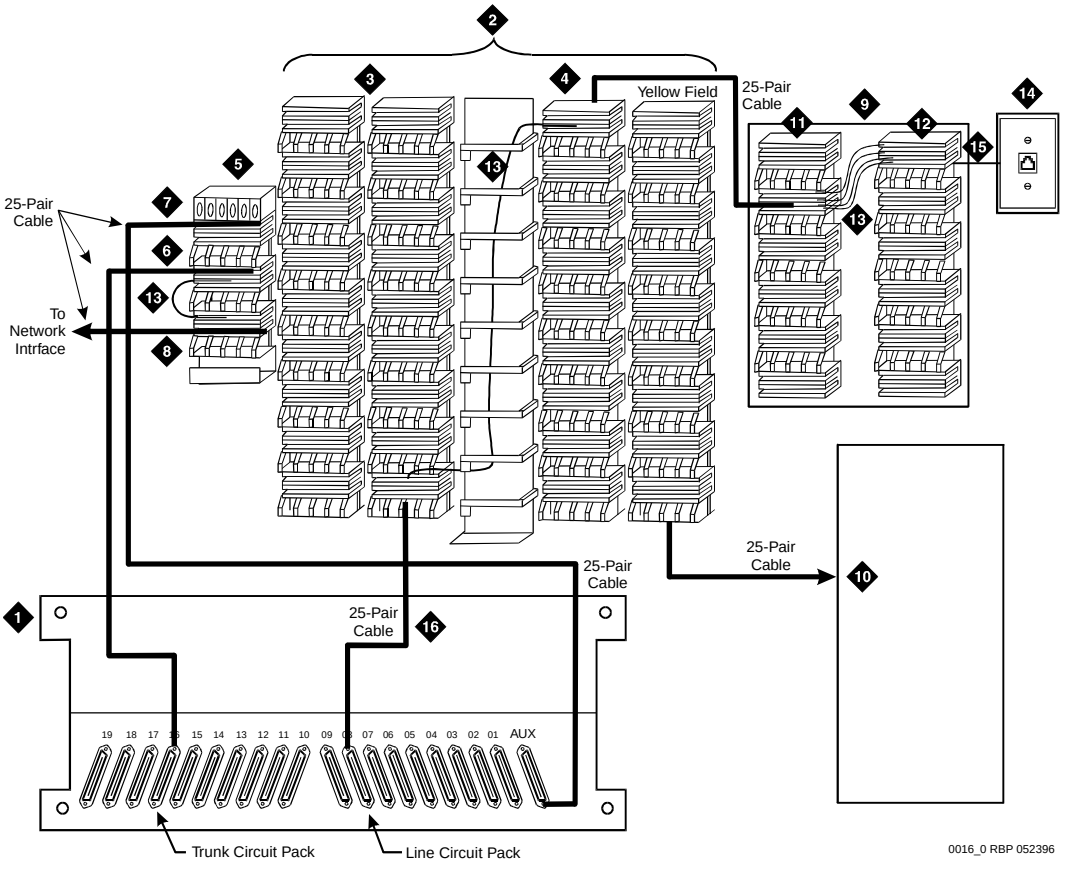
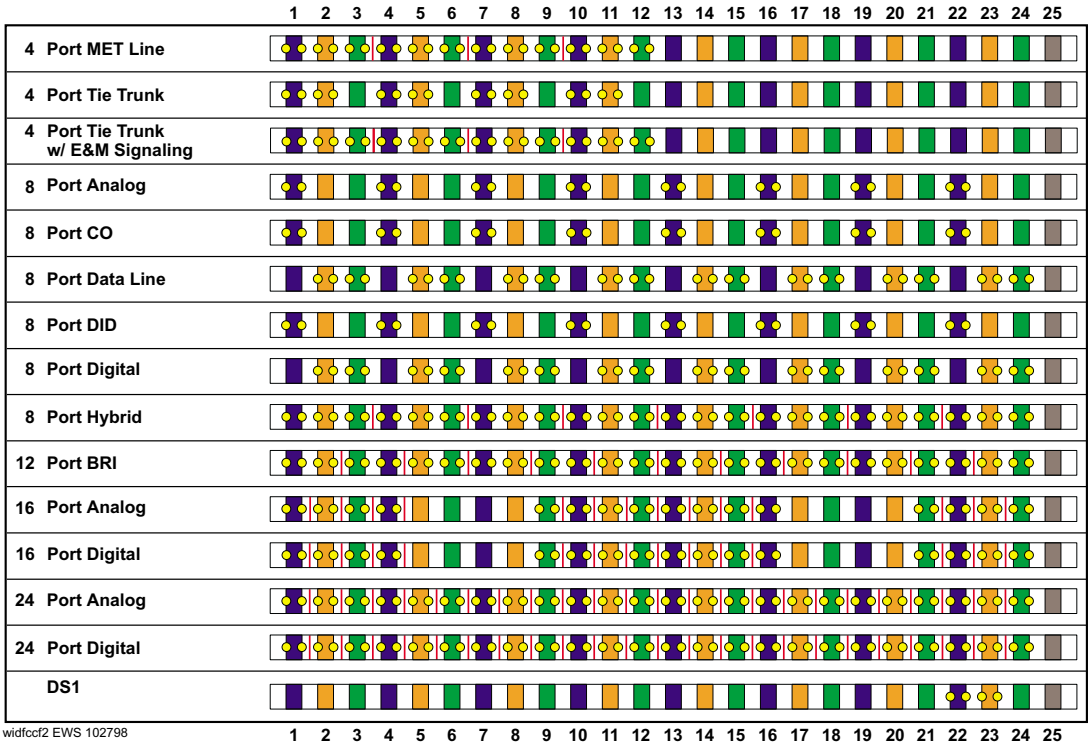


Figure notes

1	Rear of Media Gateway	**9**	Satellite Closet
2	Main Distribution Frame (MDF)	**10**	Auxiliary Cabinet (Yellow Field)
3	Port Distribution Field (Purple Field)	**11**	White Field
4	Station Distribution Field (White Field)	**12**	Blue Field
5	Trunk/Auxiliary Field	**13**	Cross-Connect Jumpers
6	Purple Field	**14**	103A or Modular Wall Jack
7	Yellow Field	**15**	4-Pair Line Cord
8	Green Field	**16**	To Line Circuit Pack

Example MDF Connections (Avaya MCC1 Media Gateway)


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
4 Port MET Line
4 Port Tie Trunk
4 Port Tie Trunk w/ E&M Signaling
8 Port Analog
8 Port CO
8 Port Data Line
8 Port DID
8 Port Digital
8 Port Hybrid
12 Port BRI
16 Port Analog
16 Port Digital
24 Port Analog
24 Port Digital
DS1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

widfccf2 EWS 102798

MDF Cross-Connect Fields

Each Main Distribution Frame (MDF) contains a trunk/auxiliary field and a distribution field. The trunk/auxiliary field contains three cross-connect areas:

- *The green field* terminates the network interface leads from the Central Office (CO) and provides the terminals to cross-connect the leads to the purple or yellow fields as required. A single row of the 110-type terminal block can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.
- *The purple field* terminates the trunk circuits from the S8700 Multi-Connect configuration with WP-90929, List 1 or 3 concentrator cables. Also, 25-pair cables can be used to terminate trunk circuits from the S8700 Multi-Connect configuration with each trunk circuit pack connecting to one 25-pair row of the 110-type terminal block. Each terminal block row can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.
- *The yellow field* provides cross-connect terminals for all miscellaneous leads from the S8700 Multi-Connect configuration, such as alarm monitors, emergency transfer relay power, and attendant console power. This field is used for emergency transfer wiring, paging equipment, music sources, and so forth.

The distribution field contains four cross-connect areas:

- *The purple field* (port field) terminates 25-pair cables from the S8700 Multi-Connect configuration. Each line circuit pack connects to one 25-pair row of the 110-type terminal block. One 25-pair cable is required for each line circuit pack.

NOTE:
The 16-port analog line circuit pack requires an adapter cable to connect from one connector on the S8700 Multi-Connect configuration to two 25-pair connectors on a terminal block. Two MET circuit packs require a concentrator cable to connect from two connectors on the S8700 Multi-Connect configuration to one 25-pair connector on a terminal block.

- *The yellow field* (auxiliary field) terminates all 25-pair cables from the auxiliary cabinet and the Processor Interface. The yellow field is located in the lower right-hand corner of the distribution field.
- *The white field* (station field) terminates the station wiring. The white field indicates 3-pair station circuits (eight circuits per 25-pair cable) routed through a satellite closet.
- *The blue field* (station field) also terminates station wiring. The blue field indicates 3- and/or 4-pair station circuits (eight or six circuits, respectively, per 25-pair cable). The fourth pair, of the 4-pair station circuit provides adjunct power from the cross-connect field on an as-needed basis to terminals within 250 feet (76 m) of the MDF.

Main Distribution Frame

The preferred location of the Main Distribution Frame (MDF) is directly behind the Avaya SCC1 Media Gateway stack or the Avaya MCC1 Media Gateway. “Typical 110A-Type Terminal Blocks (SCC)” on page 123 shows a typical Avaya SCC1 Media Gateway installation using 110A-type terminal blocks, and “Typical 110P-Type Terminal Blocks (MCC)” on page 124 shows a typical Avaya MCC1 Media Gateway installation using 900-pair 110P-type terminal blocks.

Typical 110A-Type Terminal Blocks (SCC)

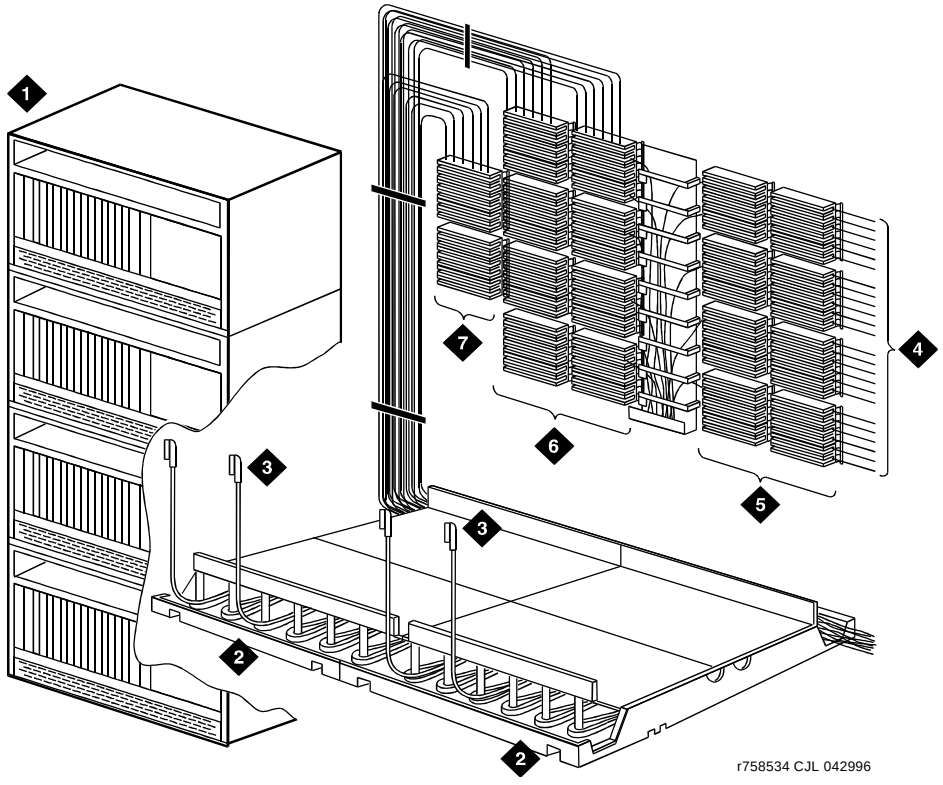


Figure notes

1	Avaya SCC1 Media Gateways (Stacked)	**4**	Station Cables
2	Z113A Cable Slack Manager	**5**	Station Distribution Field
3	25-Pair Cable to Media Gateway	**6**	Port Distribution Field
		7	Trunk/Auxiliary Field

Typical 110P-Type Terminal Blocks (MCC)

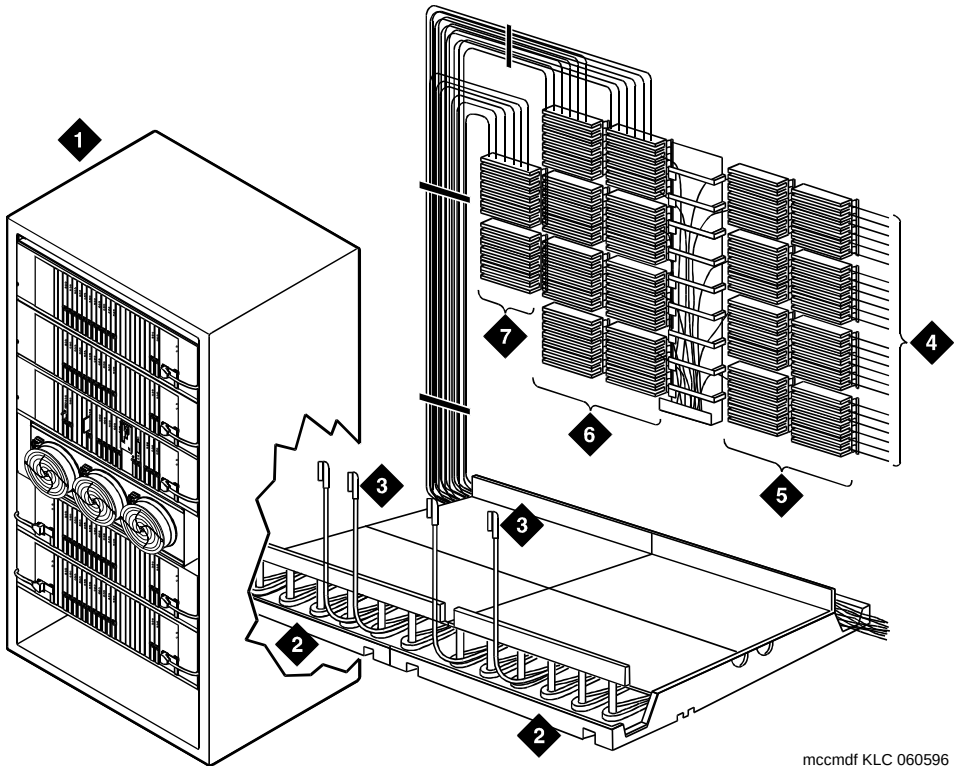


Figure notes

1	Avaya MCC1 Media Gateway	**5**	Station Distribution Field
2	Z113A Cable Slack Manager	**6**	Port Distribution Field
3	25-Pair Cable to Media Gateway	**7**	Trunk/Auxiliary Field
4	Station Cables		

Main Distribution Frame Labels

‘‘Label Graphic Symbols and Nomenclature’’ on page 125 shows the graphic symbols used on labels for the S8700 Multi-Connect configuration, cross-connections, information outlets, and cables. The labels are color-coded to identify S8700 Multi-Connect configuration wiring:

- Green — To Central Office (CO)
- Purple — To S8700 Multi-Connect configuration ports
- Yellow — To auxiliary equipment and miscellaneous S8700 Multi-Connect configuration leads
- Blue — To information outlets
- White — From Main Distribution Frame to satellite locations (3-pair)

Each label identifies 2 rows on the terminal block. The upper half identifies the row above it and the lower half identifies the row below it. The labels are inserted into the clear plastic designation strips furnished with the terminal blocks. The strip is snapped in place between the terminal block rows. Label code number 1220A (comcode 103970000) contains all of the required labels.

Label Graphic Symbols and Nomenclature

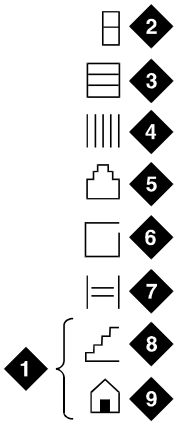


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Figure notes

1 Write Floor or Building Identification on Label as Required

2 Media Gateway

3 Carrier

4 Slot

5 Information Outlet

6 Site/Satellite Closet

7 Tie Circuit

8 Floor

9 Building

Off-Premises Circuit Protection

Protection from hazardous voltages and currents is required for all off-premises (out of building) trunks, lines, and terminal installations. Both over-voltage protection (lightning, power induction, and so forth), and sneak current protection are required. Sneak current protectors must be either UL listed/CSA certified, or must comply with local safety standards.

Sneak current protectors must have a maximum rating of 350 mA, and a minimum voltage rating of 600 V, or as required by local regulations. The following devices protect the S8700 Multi-Connect configuration from over-voltages:

- Analog trunks use the 507B sneak protector or equivalent. Over-voltage protection is normally provided by the local telephone company.
- Analog voice terminals use one of the following types of combined over-voltage and sneak current protection, or equivalent:
    - Carbon block with heat coil for UL code 4B1C
    - Gas tube with heat coil for UL code 4B1E-W
    - Solid state with heat coil for UL code 4C1S
- DCP and ISDN-BRI terminals use the solid state 4C3S-75 with heat coil protector, or equivalent
- DS1/E1/T1 circuits require isolation from exposed facilities. This isolation may be provided by a CSU (T1), LIU (E1), or other equipment that provides equivalent protection

Sneak Fuse Panels

Sneak current protection is required between the incoming RJ21X or RJ2GX network interface and the S8700 Multi-Connect configuration for both trunk and off-premise circuit packs.

The Model 507B sneak current fuse panel, or equivalent, is recommended for sneak current protection. The panel contains two 25-pair connectors, fuse removal tool, and fifty 220029 sneak fuses (and two spares).

Connector cables (B25A male to female) connect the network interface to the sneak fuse panel. Also, 157B connecting blocks equipped with SCP-110 protectors can be used for sneak current protection.

Sneak Fuse Panel Ordering Information

Description	Comcode
157B Connecting Block	403613003
SCP-110 Protector	406948976
507B Sneak Current Fuse Panel	107435091
220029 Sneak Current Fuse	407216316

NOTE:
Sneak current protectors with a rating of 350 mA at 600 volts must be Underwriter's Laboratory (UL) listed for domestic installation and Canadian Standards Association (CSA) certified for Canadian installation.

- The 507B includes 52 sneak fuses and two cables and can be ordered using PEC code 63210.
- The SCP-110 protectors are used with 110-type hardware and on the 507B Sneak Fuse Panel. The SCP-110 Protectors can be ordered separately and installed on the 157B connecting block. Fifty protectors are required per block.

Cable Installation

NOTE:
To route the cables from the rear of the SCC stack or MCC to the MDF, use the ‘‘Install Cable Slack Managers’’ on page 162 procedure. Also see ‘‘Cable Slack Manager’’ on page 134.

This section has information about

- ‘‘Equipment Room Cabling Labels’’ on page 128
- ‘‘Cable Routing Guidelines’’ on page 129
- ‘‘Control Carrier Outputs Cable Installation’’ on page 129
- ‘‘Connect Expansion Control Carrier Outputs Cable’’ on page 153
- ‘‘Trunk Cables Among Network Interface, Sneak Fuse Panel, and Media Gateway’’ on page 130

And procedures for:

- ‘‘Label Expansion Control Carrier Cable’’ on page 152
- ‘‘Connect Expansion Control Carrier Outputs Cable’’ on page 153
- ‘‘Connect Trunk Pairs Using Concentrator Cables’’ on page 153
- ‘‘Connect Trunk Pairs to Media Gateway Using Jumper Wires To Establish 3-Pair Modularity’’ on page 154
- ‘‘Install Cables Between Media Gateway and MDF’’ on page 156
- ‘‘Install Connector Cables Between Auxiliary Cabinet and MDF’’ on page 157

Equipment Room Cabling Labels

The purple port label shown in ‘‘Equipment Room Cabling Labels’’ on page 130 is installed on both ends of the 25-pair cables connecting to the trunk/auxiliary field and/or distribution field.

The top blue/yellow building and floor labels are for cables connecting from the equipment room to a site/satellite location on another floor or in another building. The yellow label is for auxiliary circuits connecting to the trunk/auxiliary field. The bottom blue/yellow label is for 25-pair cables connecting to site/satellite closets.

‘‘Equipment Room Labels’’ on page 130 details the label name and range of each label. ‘‘Cable/Connector/Building Label Ordering Information’’ on page 131 provides label ordering information.

‘‘Self-Stick Label on 25-Pair Cable Connector’’ on page 131 shows the proper way to install a label on a 25-pair cable connector. Install the label near the rear of the connector so it is not obscured by the media gateway connector retainers. It can also be installed on the skin of the cable near the connector.

Cable Routing Guidelines

‘‘Cable Routing to Top Terminal Blocks’’ on page 131 and ‘‘Cable Routing to Bottom Terminal Blocks’’ on page 132 show typical cable routing from the media gateway to the top and bottom of the MDF, respectively.

Use these guidelines when routing cables from the media gateway to the MDF. Following these guidelines will maximize use of the cable slack managers and make future cabling additions and changes easier.

- Connect each port cable at the media gateway, and then route it along the front trough of the cable slack manager to the connecting/terminal block, where the cable is terminated.
- Leave enough slack at the media gateway end of the cable to allow for proper dressing of the cables.
- Route the cable from the media gateway to the wall. Place the cable beside 1 of the rows of columns in the cable slack manager.

NOTE:
Retainers mounted on the columns keep the cable from protruding above the top of the base of the cable slack manager.

- Determine the length of the cable required to reach from the cable slack manager to the assigned connecting/terminal block.
- Use D rings on the wall to support the cable. (The cable must be supported.)
- Coil the cable around the columns in the cable slack manager to store cable slack. The first run should always go across the full length of the 5 columns in the cable slack manager.
- Connect the cable to the assigned connecting/terminal block.
- Avoid placing copper cables where they may bend or strain fiber optic cables.

Control Carrier Outputs Cable Installation

A connector on the rear of the Expansion Control Carrier is labeled **AUX**. A 25-pair cable connects the **AUX** connector to a 110-type terminal block in the yellow field of the trunk/auxiliary field. The **AUX** connector outputs include the following:

- 7 DC power (-48 VDC) sources for emergency transfer units
- 3 DC power (-48 VDC) sources for remotely powering a total of 3 attendant consoles or executive voice terminal adjuncts

Trunk Cables Among Network Interface, Sneak Fuse Panel, and Media Gateway

The 1-pair of Central Office (CO) trunks are installed by the network provider in the green field. Up to 24 pairs may be terminated on each row of the 110-type terminal block. Tie trunks also appear in the green field with up to eight 3-pair trunks terminated on each row of the 110-type terminal block.

WP-90929, List 1 and 3 concentrator cables can be used to connect the media gateway to the 110-type terminal blocks in the purple field. The 1-pair patch cords/jumper wires are then run from the purple terminal block rows to the green terminal block rows in order to establish the correct 3-pair modularity.

Equipment Room Cabling Labels

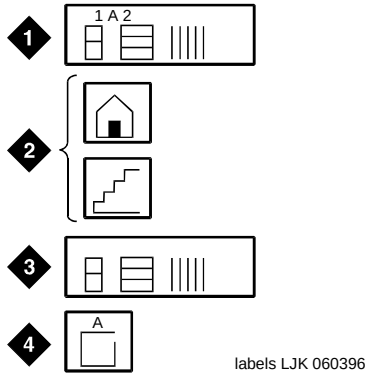


Figure notes

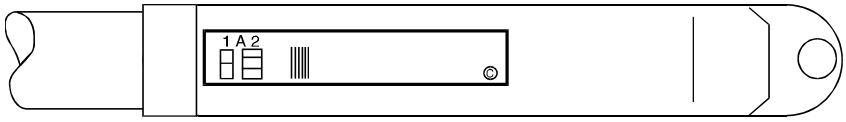
1	Purple Label (Port Cable)	**3**	Yellow Label (Auxiliary)
2	Blue/Yellow Label (Building and Floor)	**4**	Blue/Yellow Label (Site or Satellite)

Equipment Room Labels

Label Name	Range
Port Cable	1A1-1A20, 1B1-1B20, 1C1-1C20, 1D1-1D20, 1E1-1E20
Building	Field Identified
Floor	Field Identified
Auxiliary Cable	Field Identified
Site or Satellite	A-F and/or Field Identified

Cable/Connector/Building Label Ordering Information		
Description	**Quantity**	**Comcode**
201A Labels	34 Sheets	103969994

Self-Stick Label on 25-Pair Cable Connector



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Cable Routing to Top Terminal Blocks

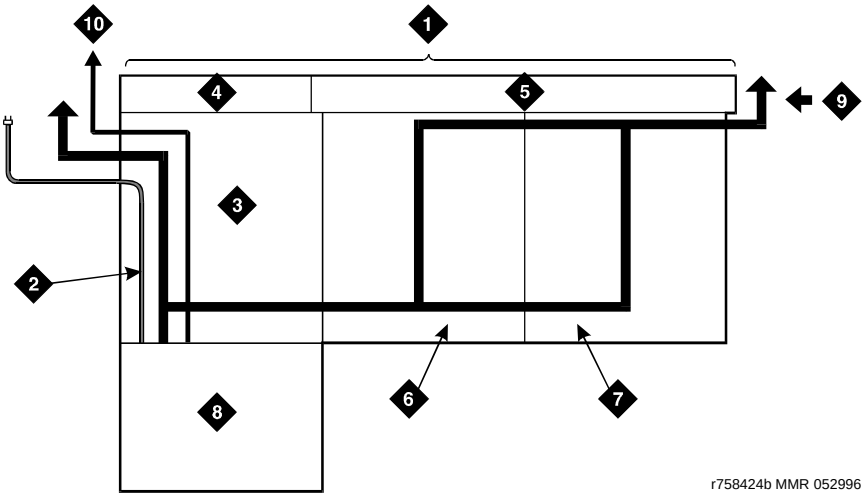

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Figure notes

1 Main Distribution Frame

2 AC Power Cord (AC-Powered Media Gateways Only)

3 Cable Slack Manager Number 1

4 Trunk/Auxiliary Field

5 Station Distribution Field

6 Cable Slack Manager Number 2

7 Cable Slack Manager Number 3

8 Media Gateway(s)

9 To Building Cables

10 10 AWG (#25) (6 mm^2) Wire to Coupled Bonding Conductor

Cable Routing to Bottom Terminal Blocks

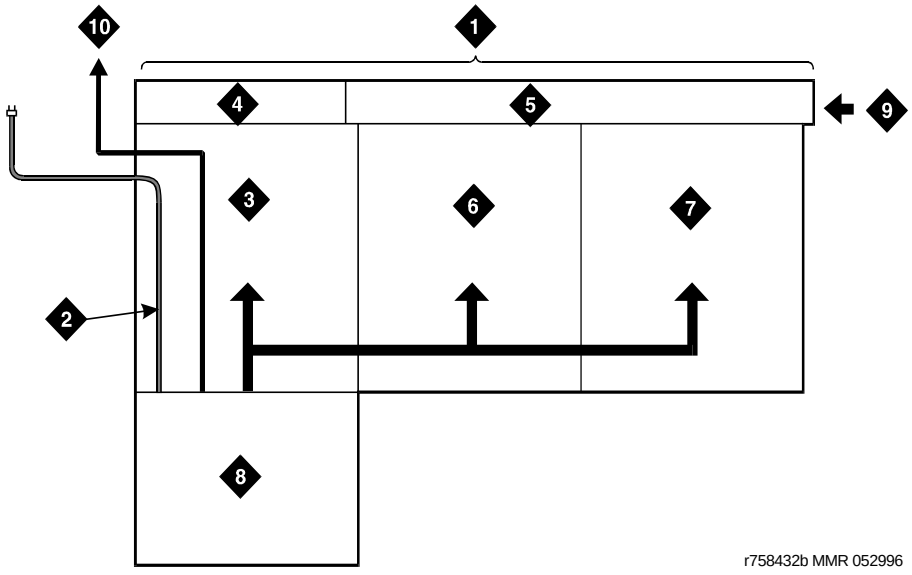


Figure notes

1 Main Distribution Frame

2 AC Power Cord (AC-Powered Media Gateways Only)

3 Cable Slack Manager Number 1

4 Trunk/Auxiliary Field

5 Station Distribution Field

6 Cable Slack Manager Number 2

7 Cable Slack Manager Number 3

8 Media Gateway(s)

9 Building Cables (Through Cable Trough)

10 10 AWG (#25) (6 mm^2) Wire to Coupled Bonding Conductor

Coupled Bonding Conductor

The Coupled Bonding Conductor (CBC) connects to the single-point ground block and runs adjacent to pairs in an associated telecommunications cable. The mutual coupling between the bonding conductor and the pairs reduces potential differences in terminating equipment.

The conductor consists of a 10 AWG (#25) (2.5 mm^2) wire tie-wrapped to the inside wiring cable and terminated at the CBC terminal bar at the Main Distribution Frame (MDF). A minimum of 12 inches (30.48 cm) spacing must be maintained between the CBC and other power and ground leads.

The 10 AWG (#25) (2.5 mm^2) wire must be long enough to reach the telecommunications cables at the rear of the media gateways, follow these cables to the MDF, and to terminate at the CBC.

Installation Space Requirements

This section has information about

‘‘Sneak Fuse Panels and Emergency Transfer Units’’ on page 134

‘‘110-Type Hardware’’ on page 134

‘‘Cable Slack Manager’’ on page 134

Sneak Fuse Panels and Emergency Transfer Units

Approximately eight inches (20 cm) of horizontal wall space is required for each column of sneak fuse panels. Horizontal wall space must also be provided for emergency transfer units.

110-Type Hardware

The trunk/auxiliary field and the distribution field are mounted on the same wall. Each 110P-type terminal block is 8.5 inches (21.6 cm) wide. Vertical patch cord troughs are 5.31 inches (13.4 cm) wide and horizontal patch cord troughs are 23 inches (58.4 cm) wide.

Each 110A-type terminal block is 10.81 inches (27.4 cm) wide; however, no horizontal patch cord troughs are used and the blocks are shorter than 110P-type terminal blocks. This allows the 110A-type terminal blocks to be stacked. Therefore, the 110A-type hardware requires less space than the 110P-type hardware on a per-station basis.

Cable Slack Manager

A Cable Slack Manager is 32 inches (81.3 cm) wide. Slack managers are commonly used in installations consisting of media gateway stacks. The quantity of slack managers is determined by dividing the total length of the Main Distribution Frame (MDF) in inches (cm) by 32 (81.3). A partial number of 0.4 or less should be rounded down, and a partial number of 0.5 or more should be rounded up (for example: 2.4 = 2 Cable Slack Managers and 2.5 = 3 Cable Slack Managers).

NOTE:
Cable clamps are required in installations with Cable Slack Managers. At the rear of the media gateways, on each rear ground plate, install two cable clamps using the screws provided. These clamps hold the 25-pair input/output or Main Distribution Frame (MDF) cables in place.

Station Wiring Design

The following hardware and cabling is used:

- ‘‘Information Outlets’’ on page 135 (modular wall jacks)
- ‘‘Station Cables’’ on page 135
- ‘‘Closets’’ on page 136
    - Site locations
    - Satellite locations

A brief description of each of the above listed items follows. Ordering information is not provided for station cables and information outlets.

Information Outlets

Information outlets are 8-pin modular wall jacks. Most of the outlets are wired with push-on connections. Information outlets are also available that connect to a double modular plug-ended 4-pair station cable routed from the MDF, a site/satellite location, or an adapter.

Station Cables

For clarity, a station cable is either a 25-pair cable, multiple 25-pair cable, or 4-pair D-inside wire (DIW) run from the equipment room, site/satellite location, or adapter to the information outlets. The following station cables are available. See ‘‘Example of Extending 4-Pair Station Cables’’ on page 138.

25-pair station cable — Use between the equipment room and site/ satellite locations or adapters. Use an A25D cable (male to male) between the equipment room and satellite closet. Use a B25A cable between the equipment room and site closet or adapter.

Multiple 25-pair station cable — Use between the equipment room and site/satellite locations or adapters. This cable consists of individually sheathed 25-pair cables with a factory-installed 25-pair connector on each end. Use a male to female cable to connect between the equipment room and site location or adapter. Use a male to male cable to connect between the equipment room and satellite location. Staggered-finger cables are recommended for all multiple 25-pair station cables and are available in both double-ended and single-ended types.

Single modular plug-ended 4-pair station cable — Use this cable between adapters and information outlets that require push-on connections. It can also be used when 4-pair station cables are field- terminated on the 110-type terminal blocks in the equipment room or satellite closet and modularly connected to information outlets. The station cables are available in the following lengths:

- 10 ft (3.05 m)
- 25 ft (7.62 m)
- 50 ft (15.24 m)
- 75 ft (22.86 m)
- 100 ft (30.5 m)
- 150 ft (45.72 m)
- 200 ft (61 m)

NOTE:
If more than 200 ft (61 m) of 4-pair station cable is required, a 451A in-line adapter (double-ended modular female connector) is attached to the cable and a second 4-pair cable of the required length is plugged into the adapter. See Example of Extending 4-Pair Station Cables.

Double modular plug-ended 4-pair station cable — Use this cable to provide nonstandard length runs between adapters and information outlets with push-on connections. It can also be used between adapters and modularly connected information outlets. It is available in the same lengths as the single modular plug-ended cable.

Bulk Cable — Same as the 25-pair cable or multiple 25-pair cable; however, the bulk cable is not equipped with connectors. Use this cable between the equipment room and satellite closets when both are equipped with punch-down type terminal/connecting blocks.

4-pair station cable — Use this cable when 4-pair station cables are to be field-terminated on the 110-type terminal blocks in the equipment room or satellite closet and the information outlets require push-on connections

Closets

Site Locations

Site locations are closets that provide a point in the station wiring for the administration of remote powering. Adapters are used at site locations to terminate the 25-pair station cables and provide connection points (modular jacks) for power adapters and 4-pair station cables.

The258A and BR2580A adapters plug into a 25-pair female cable connector. These adapters divide the 25-pair cable into six 4-pair (modular jack) circuits. See ‘‘258A and BR2580A Adapters’’ on page 138.

The 356A adapter plugs into a 25-pair female cable connector. See ‘‘356A Adapter’’ on page 139. The 356A adapter divides the 25-pair cable into eight 3-pair circuits. Although the circuits are 3-pair, the adapters modular jacks will accept the 8-wide modular plug used on the 4-pair station cable.

CAUTION:
Adapters wired similarly to the 356A should not be used. Their jacks do not accept 4-pair plugs.

Use theZD8AJ adapter to connect a Multi-button Electronic Telephone (MET) line cord to an information outlet. The adapter interchanges pairs 3 and 4 to correspond with the pair assignments for the telephone. The line cord plugs into the adapter, and then the adapter plugs into an information outlet.

Satellite Locations

Satellite locations are closets that provide an administration point (using cross-connect equipment) for station cables and where adjunct power may be applied. The station cable circuits from the equipment room MDF are 3-pair. At the satellite location, 4-pair circuits run to the information outlets. The hardware used is 110-type terminal blocks.

Satellite Locations Using 110-Type Hardware

Each terminal block has a 3-pair (white field) and a 4-pair (blue field) located on the same terminal block.

The 110A-type terminal block that can be used is the 110AE1-75FT. It must be field-terminated to both the white and blue fields.

The 300-pair 110P-type terminal blocks that can be used are:

- 110PE1-300CT/FT — 25-pair connector on the white field and field-terminated on the blue field
- 110PE1-300FT — Field-terminated on both the white and blue fields

The 900-pair 110P-type terminal blocks that can be used are:

- 110PE1-900CT/FT — 25-pair connector on the white field and field-terminated on the blue field
- 110PE1-900FT — Field-terminated on both the white and blue fields

451A Adapter Ordering Information

Color	Comcode
Gray	103942272
Ivory	103786240

Example of Extending 4-Pair Station Cables

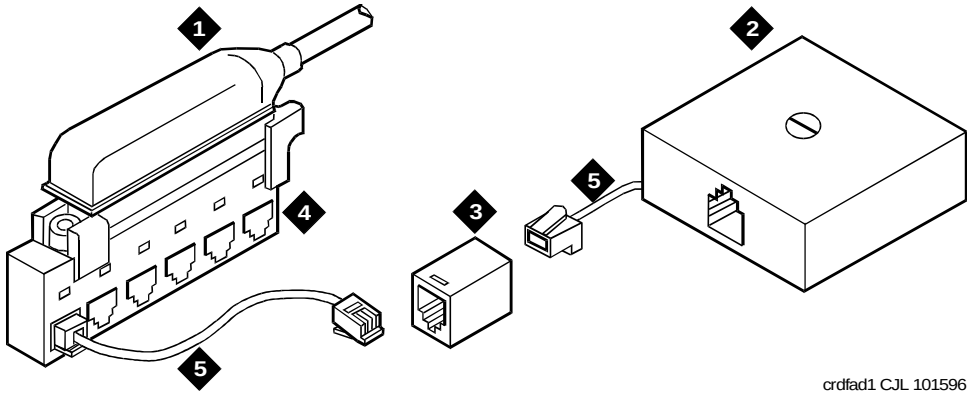


Figure notes

1 Station Cable
2 Information Outlet
3 451A In-Line Adapter
4 258A Adapter
5 4-Pair Station Cable

258A and BR2580A Adapters

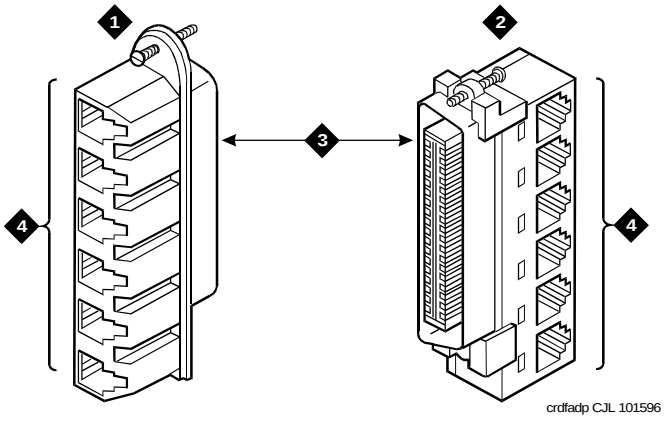


Figure notes

1 BR2580A Adapter
2 258A Adapter
3 25-Pair Male Ribbon Connector
4 4-Pair Modular Jacks (8 Pins)

356A Adapter

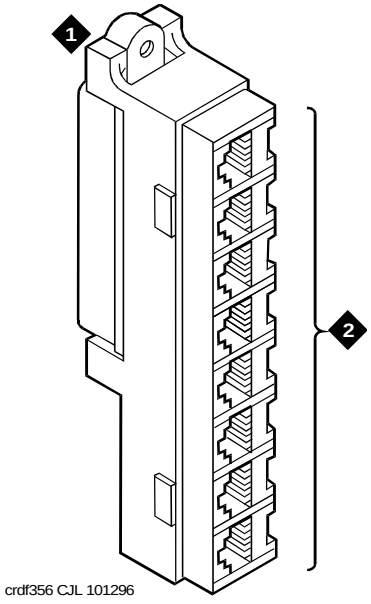


Figure notes

1 356A Adapter

2 4-Pair Modular Jacks (6 pins each, connected to 25-pair ribbon connector)

Adapter Ordering Information

Description	Comcode
258A Adapter	102605136
BR2580A Adapter	403384720
356A Adapter	104158829
400B Adapter	103848859
400B2 Adapter	104152558
ZD8AJ Adapter	103881421

Station Circuit Distribution from Equipment Room

This section explains the station circuit distribution from the equipment room to the information outlets for new wiring installations. Example connection diagrams are provided to show the options for running and connecting the station cables.

If most of the telephones/voice terminals that require remote powering are within 250 ft (76.2 m) of the equipment room, 4-pair station circuits are run from the equipment room to the information outlets. If this is not the case, or if the customer requires 2-point administration, 3-pair station circuits are run from the equipment room to satellite locations. Then, the 4-pair station circuits are run from the satellite locations to the information outlets.

This section has information about

- ‘‘4-Pair Station Circuits’’ on page 140
- ‘‘3-Pair to 4-Pair Station Circuit Distribution’’ on page 140

Lists of terminals that can be connected to the S8700 Multi-Connect configuration are provided in

- ‘‘Voice and Data Terminals’’ on page 145
- ‘‘Administration Terminals’’ on page 147

4-Pair Station Circuits

Four-pair circuits can be run directly from an equipment room MDF to a 258A or BR2580A adapter as shown in ‘‘4-Pair Circuit Distribution and Connectivity’’ on page 141. The 4-pair station cables connect the adapter to the information outlets.

The 4-pair station cables can be run directly from the equipment room to the information outlets if 4-pair terminal blocks are used in the distribution field. See ‘‘4-Pair Run to Equipment Room or Satellite Location’’ on page 142. The station cables must be field-terminated on the 110-type terminal blocks.

If 110-type terminal blocks are used with a modular plug-ended station cable, an adapter can be connected directly to the 110-type terminal block connectors. See ‘‘4-Pair Run to Equipment Room or Satellite Location’’ on page 142.

3-Pair to 4-Pair Station Circuit Distribution

‘‘3-Pair to 4-Pair Satellite Location Connectivity’’ on page 143 shows the 3-pair circuit distribution from an equipment room MDF to a satellite location using 110-type hardware. Four-pair circuits are distributed from the satellite location to the information outlets.

Three-pair circuits can also be run directly from the equipment room MDF to a 356A adapter as shown in ‘‘3-Pair to 4-Pair Circuit Distribution and Connectivity’’ on page 144. Four-pair station cables connect the adapter to the information outlets. Four-pair station cables can be run directly from a satellite location to the information outlets as previously described.

NOTE:
Bridged taps are not allowed on any part of the station wiring.

4-Pair Circuit Distribution and Connectivity

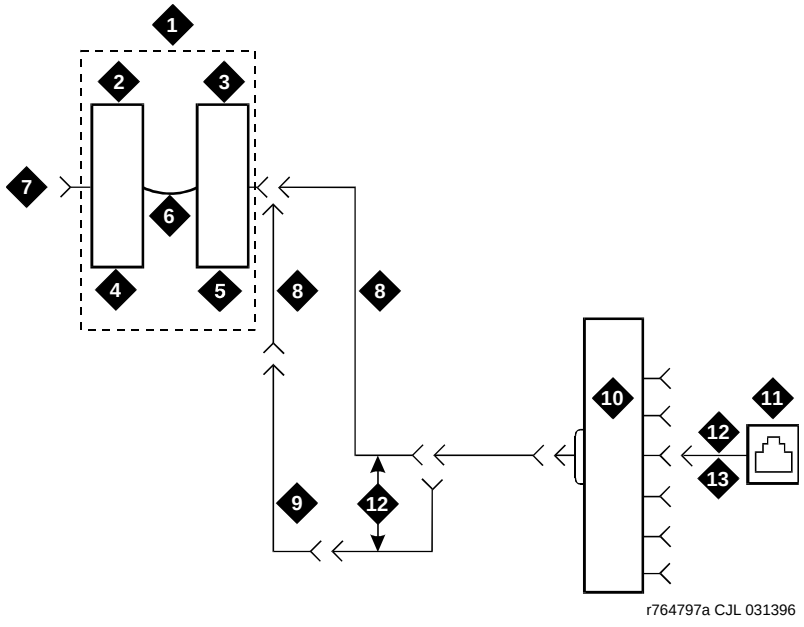


Figure notes

1 Part of Main Distribution Frame (MDF)

2 3-Pair Connecting Blocks

3 4-Pair Connecting Blocks

4 Purple Field

5 Blue Field

6 Patch Cord or Cross-Connect Jumpers

7 To Media Gateway (Three-Pair Modularity)

8 B25A Cable

9 Connectorized (Staggered Finger) Multiple 25-Pair Cable

10 258A or BR2580A Adapter

11 Information Outlet

12 4-Pair Circuit

13 DIW Station Cable (D-Inside Wire)

4-Pair Run to Equipment Room or Satellite Location

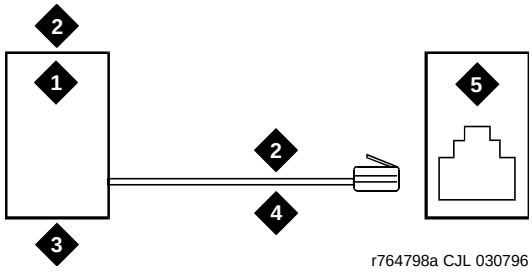


Figure notes

1 Station Side of MDF or Satellite Location

2 4-Pair Circuit

3 Blue Field

4 DIW Station Cable (D-Inside Wire)

5 Information Outlet

4-Pair Run to Equipment Room or Satellite Location

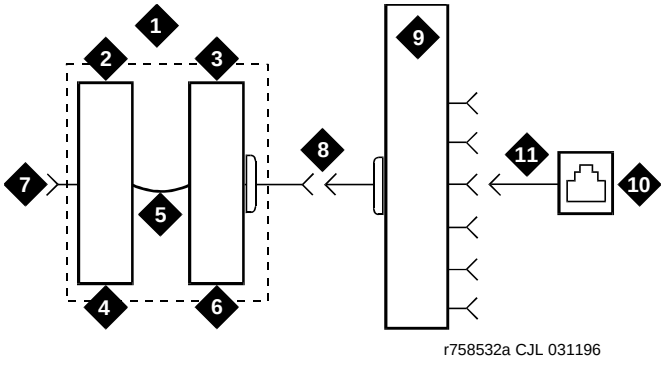


Figure notes

1 Part of MDF

2 3-Pair Connecting Blocks

3 4-Pair Connecting Blocks

4 Purple Field

5 Patch Cord or Cross-Connect Jumpers

6 Blue Field

7 To Media Gateway (3 pair modularity)

8 A25D Cable

9 258A or BR2580A Adapter

10 Information Outlet

11 4-Pair Circuit (DIW station cable (D-Inside Wire))

3-Pair to 4-Pair Satellite Location Connectivity

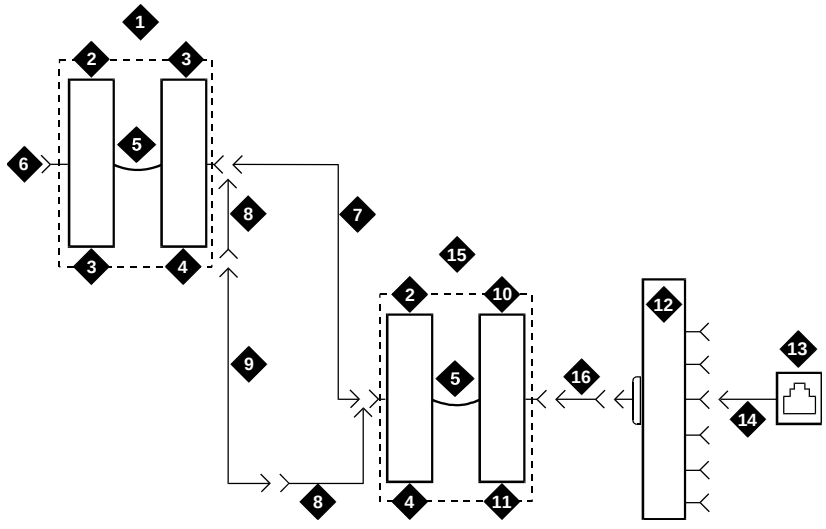


Figure notes

1 Part of MDF

2 3-Pair Connecting Blocks

3 Purple Field

4 White Field

5 Patch Cord or Cross-Connect Jumpers

6 To Media Gateway (3 Pair Modularity)

7 A25D Cable (3-Pair Circuits)

8 B25A Cable

9 Connectorized (staggered finger) Multiple 25-Pair Cable

10 4-Pair Connecting Blocks

11 Blue Field

12 258A or BR2580A Adapter

13 Information Outlet

14 4-Pair Circuit [DIW Station Cable (D-Inside Wire)]

15 Part of Satellite Location

16 4-Pair Circuits (B25A Cable)

3-Pair to 4-Pair Circuit Distribution and Connectivity

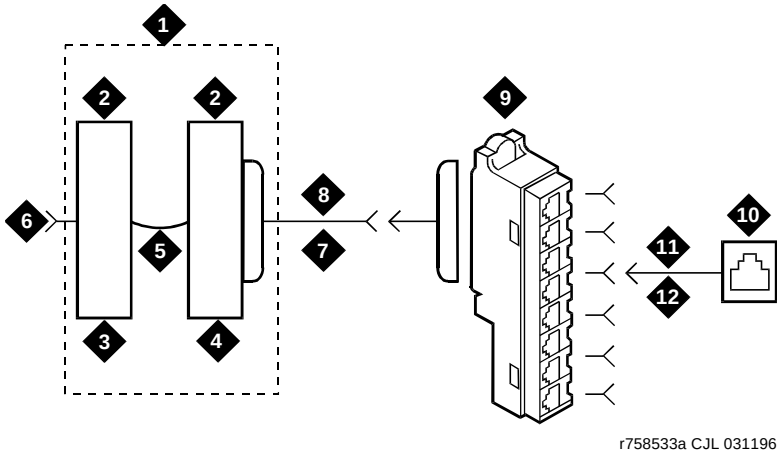


Figure notes

1 Part of Main Distribution Frame (MDF)

2 3-Pair Connecting Blocks

3 Purple Field

4 Blue Field

5 Patch Cord or Cross-Connect Jumpers

6 To Media Gateway (3-Pair Modularity)

7 B25A Cable

8 3-Pair Circuits

9 356A Adapter

10 Information Outlet

11 3-Pair Circuit in 4-Pair Wire

12 DIW Station Cable (D-Inside Wire)

Voice and Data Terminals

- ‘‘Administration Terminals’’ on page 147

These voice and data terminals can connect to the S8700 Multi-Connect configuration.

Voice and Data Terminals	Type
Multi-button Electronic Telephone (MET) sets: 10, 20, 30 Button	Voice
Analog: 500, 2500/2554, 2500 DMGC, 2500YMGK, S203A Speakerphone	Analog voice
71XXX series: 7101A, 7102A, 7103A, 7104A	Analog voice
73XXX series: 7302H, 7303H, 7303S, 7305S, 7305H	Hybrid voice
74XXD series: 7401D, 7403D, 7404D, 7405D, 7406D, 7407D, 7410D, 7434D, 7444	Digital voice
81XX series: 8102, 8110 91XX series: 9101, 9103, 9110	Analog voice
84XX series: 8403B, 8405B/D/B+/D+, 8410B/D, 8411B/D, 8412, 8434, 8435 94XX series: 9403, 9410, 9434	Digital voice
Basic Rate Interface (BRI) (75XX series): 7505-VOM/T, 7506-VOM/T, 7507-VOM/T 85XX series: 8503, 8510, 8520	BRI voice
Workstation series Business Communications Terminals (BCTs) and Business Communications Systems (BCS): 510D BCT, 513 BCT, 515 BCT, 615 BCT, 715 BCT, 715 BCS PC/PBX platform (digital): PC/ISDN platform (BRI)	Data
Consoles: 301A Attendant Console, 302A1 Enhanced Generic 1 Console 602A1 ACD Console (CallMaster® digital communications terminal)	Data and voice

Voice and Data Terminals	Type
ZE01A Expansion Module for 8434Dx	Voice and Features
Cordless Hybrid: MDW 9000 (TransTalk 9000) MDC 9000	Voice
DCP Data interface: Constellation Automatic Call Distribution (ACD) data terminal	Data and voice
PassageWay interface: Consoles: 302B1, 302C1 Attendant Console 603A/D Automatic Call Distribution (ACD) Console (CallMaster digital console) 603E Automatic Call Distribution (ACD) Console (CallMaster digital console)	Data and voice

Administration Terminals

Administration of the Avaya MultiVantage (TM) Solution is accomplished via Web interface. This requires a Netscape or Internet Explorer browser.

Administration of the Avaya MultiVantage(TM) software is accomplished via Avaya Site Administration (ASA). ASA is available on the S8700 Media Server.

Layout

This section has information about

- ‘‘Information Outlet Locations’’ on page 148
- ‘‘Site, Satellite, and Adapter Locations’’ on page 148
- ‘‘Sizing 4-Pair Station Cables’’ on page 148
- ‘‘Sizing 25-Pair and Multiple 25-Pair Station Cables’’ on page 148
- ‘‘3-Pair Station Cable Circuits’’ on page 149
- ‘‘4-Pair Station Cable Circuits’’ on page 149

Information Outlet Locations

The customer or marketing representative must provide floor plans showing the information outlet locations and types (flush- or surface-mounted) required. The floor plans must also show a complete overview of all conduit and cabling facilities in the building.

Site, Satellite, and Adapter Locations

Use the following information when determining site, satellite, or adapter locations.

- Keep the number of locations to a minimum.
- To minimize the station wiring distances, centrally locate the sites/satellites, or adapters among the information outlets.
- Site/satellite locations must be easily accessible and contain AC-powered receptacles.

One 258A/BR2580A adapter is required for each 25-pair station cable containing 4-pair station circuits. One 356A adapter is required for each 25-pair station cable containing 3-pair station circuits. Hardware requirements are the same as for the equipment room.

Sizing 4-Pair Station Cables

Use the scale of the floor plan to determine the approximate length of the station cables required per the standard SYSTIMAX wiring concepts.

Sizing 25-Pair and Multiple 25-Pair Station Cables

Use the scale of the floor plan to determine the approximate length of each 25-pair station cable. The cables must be selected and properly sized to make maximum use of the hardware at the equipment room or satellite location.

Use 25-pair B25A cables to connect adapters directly to the MDF or satellite location. Staggered-finger cables, equipped with factory-installed 25-pair connectors at both ends, should be used when multiple 25-pair cables are used between the equipment room or satellite location and the adapters. B25A cables are required at the equipment room or satellite location to connect the staggered-finger cables to the 110-type terminal blocks.

Use the following information to determine the cable size (cable pairs) required for either 3-pair or 4-pair circuits. Note the length and size on the floor plan to aid in the ordering and installation of the station cables.

3-Pair Station Cable Circuits

To determine the size of station cables containing 3-pair circuits, multiply the number of 3-pair circuits required at the satellite location by 3.5. Then, using the minimum size cable requirement, round up the cable size requirement to the next highest available cable bundle size. This will provide additional pairs for growth and compensate for every twenty-fifth pair in a cable that is not used.

4-Pair Station Cable Circuits

To determine the size of station cables containing 4-pair circuits, find out how many information outlets are served by the equipment room MDF or satellite location MDF. Multiply the number of information outlets by 4. Then, using the minimum size cable requirement, round up the cable size requirement to the next highest available cable bundle size.

NOTE:
This formula may not compensate for the unused twenty-fifth pair in all cases. If not, it must be allowed for.

Patch Cord/Jumper Installation and Administration

Before starting the patch cord installation, obtain a copy of the Port Assignment Record forms from the customer or marketing representative. See ‘‘Port Assignment Record Form’’ on page 150. These forms contain the port assignments and identify the extension numbers (**Terminal No.**) of the telephones/voice terminals. Enter the jack assignments at the equipment room and indicate if adjunct power is required and where it is provided (MDF, site/satellite closet, or information outlet).

When satellite locations are provided, enter the satellite letter designation (A through F) and the jack appearance in the equipment room on the form. Also, enter the floor designation and/or building designation if appropriate. For 1-point administration, this entry is all that is required.

The white label identifying the terminal block row associated with circuits 17 to 24 connects to an identically labeled terminal block row at the satellite closet. See ‘‘Example 3-Pair Labeling to Information Outlet’’ on page 151. This is always the case for either 1-point or 2-point administration.

The satellite symbol must be installed at all connection points between the blue field and the information outlet. It must also be installed at the information outlet itself.

‘‘Example 4-Pair Labeling to Information Outlet’’ on page 152 shows an example labeling scheme for 4-pair circuits from the equipment room to the information outlets. The labeling scheme for 3-pair circuits from the MDF to a satellite location.

Port Assignment Record Form

CARRIER _____ PORT ASSIGNMENT RECORD Page _____

Slot	Port	Jack*	Extension Number Old	Extension Number New	Bldg Flr Rm	Voice Terminal Type	Voice Terminal Color	Voice Terminal Adjunct	Module	Power*		User Name/Use
	01											
	02											
	03											
	04											
	05											
	06											
	07											
	08											
	09											
	10											
	11											
___ Slot	12											
	13											
	14											
___ CKT PK Type	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24											

* To be completed by installation technician

r764787 PDH 071596

Example 3-Pair Labeling to Information Outlet

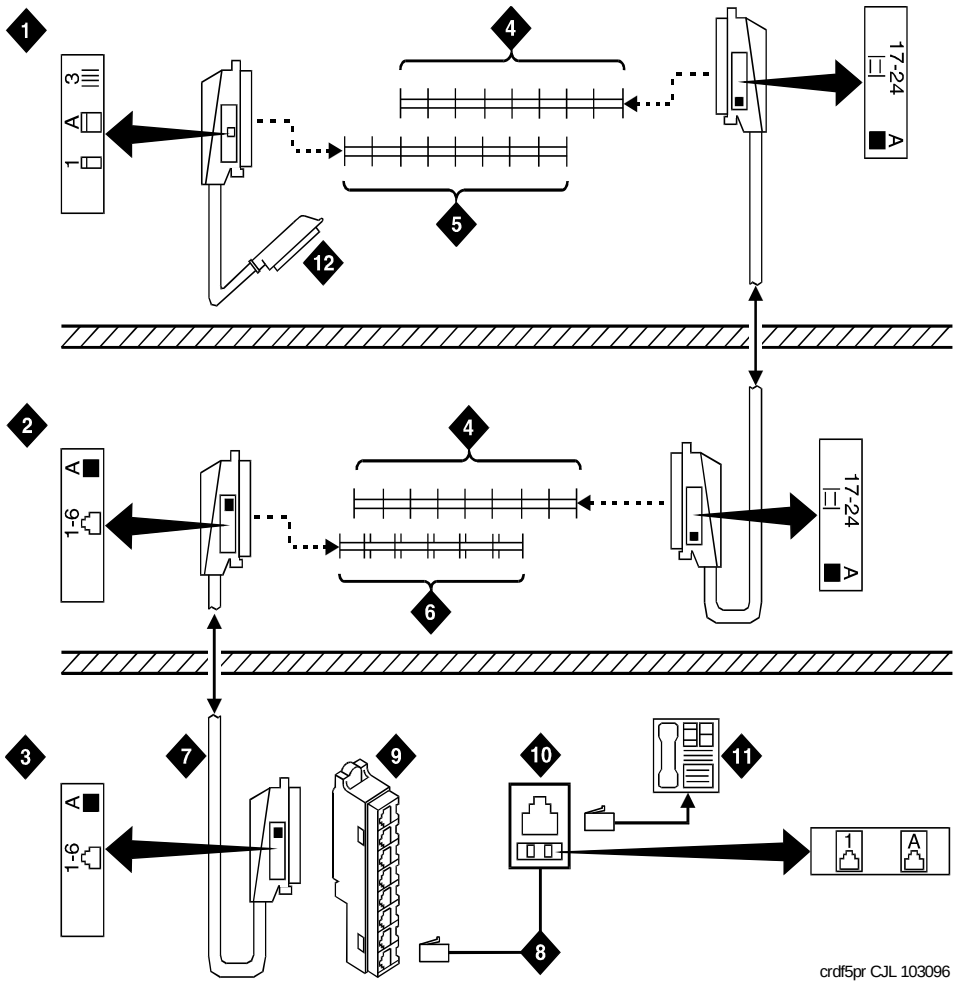


Figure notes

1 Equipment Room

2 Satellite Location

3 Work Location

4 White Row on 110 Terminal Block

5 Purple Row on 110 Terminal Block

6 Blue Row on 110 Terminal Block

7 Central Location for Terminals 1 through 6

8 D-Inside Wire Cut Down to Connecting Block

9 258A Adapter

10 Information Outlet

11 Voice Terminal

12 To Port Connector on Media Gateway (Media Gateway 1, Carrier A, Slot 03)

Example 4-Pair Labeling to Information Outlet

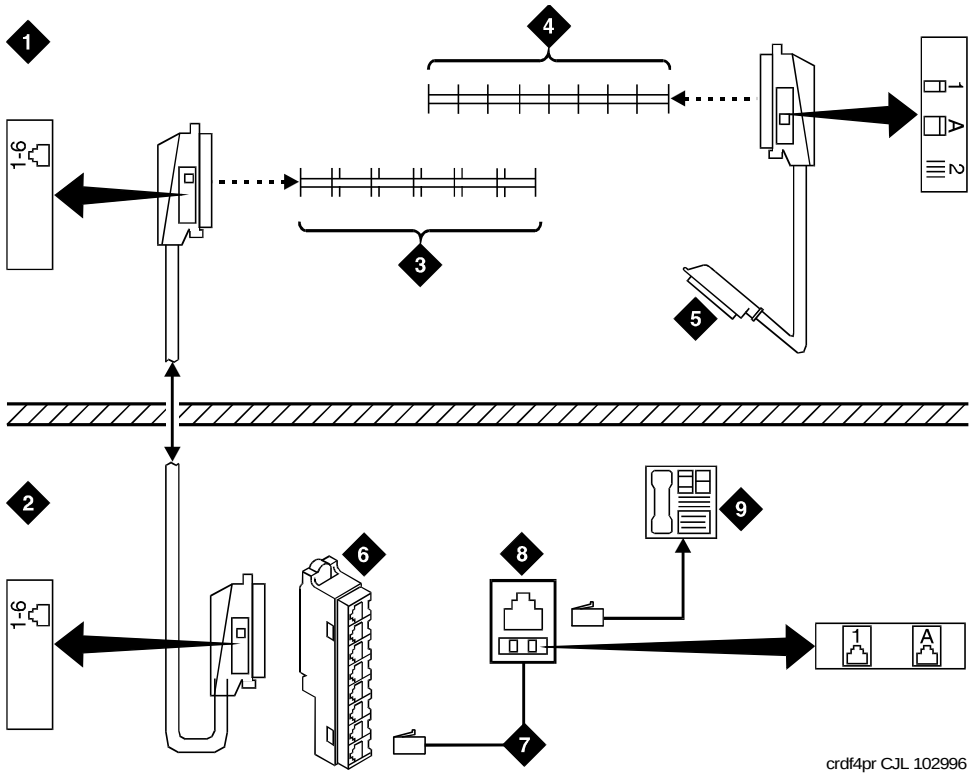


Figure notes

1 Equipment Room

2 To Central Location for Terminals 1 through 6

3 Blue Row on 110 Terminal Block

4 Purple Row on 110 Terminal Block

5 To Port Connector on Media Gateway (Media Gateway 1, Carrier A, Slot 03)

6 258A Adapter

7 D-Inside Wire Cut Down to Connecting Block

8 Information Outlet

9 Voice Terminal

Label Expansion Control Carrier Cable

1 Place the appropriate **AUX** connector label on the assigned 110-type terminal block row.

2 On the expansion control carrier cable, place a yellow auxiliary label on the connectors at each end of the cable.

3 Write “AUX” on each label.

Connect Expansion Control Carrier Outputs Cable

‘‘Installing the Telecommunications Cabling’’ on page 117

1. Plug the connector cable in the **AUX** connector on the rear of the Expansion Control Carrier.
2. Route the connector cable through the cable slack manager to the assigned 110-type terminal block in the yellow field of the trunk/auxiliary field.

Connect Trunk Pairs Using Concentrator Cables

‘‘Connect Trunk Pairs Using Concentrator Cables’’ on page 154 shows trunk pairs connected to the media gateway with concentrator cables. To install the cables:

1. Connect B25A cables between the network interface and sneak fuse panels.
2. Connect A25D cables from the sneak fuse panels to the 110-type terminal block connectors in the green field.
3. Connect patch cords/jumper wires from the terminal block in the green field to the associated terminal block in the purple field.
4. Connect the single-fingered end of the concentrator cables to the 110-type terminal block connectors in the purple field in Step 3.
5. Connect the other end (2/3-fingered end) of the concentrator cables to the appropriate carrier slots. Equipped carrier slots are identified on the CSD. Mark the nomenclature strips above the carriers to identify the slots.
6. Label connectors on each end of the cables that connect to the media gateway.
7. Route the cables down the sides of the media gateway and store the excess cable slack in the cable slack manager as previously described.

Connect Trunk Pairs Using Concentrator Cables

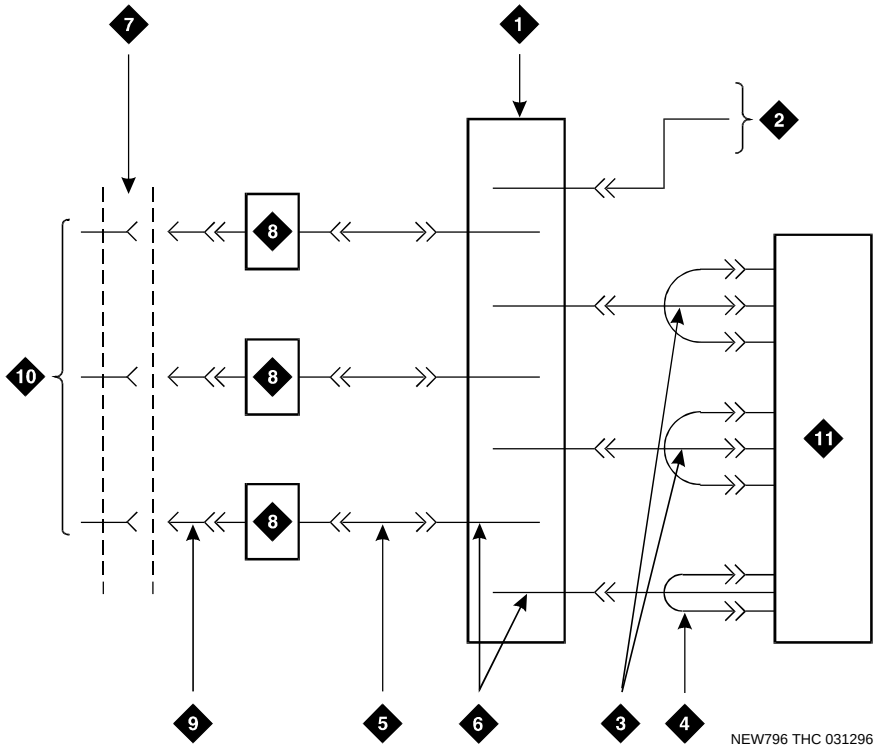


Figure notes

1 Trunk/Auxiliary Field

2 To Expansion Control Carrier AUX Connector

3 Concentrator Cable (WP90929, List 1)

4 Concentrator Cable (WP90929, List 3)

5 A25D (Male-to-Male) Cable

6 Alternate Block/Rows

7 RJ21X/RJ2GX Network Interface

8 Sneak Fuse Panel

9 B25A Cable

10 Central Office Trunks

11 Media Gateway

Connect Trunk Pairs to Media Gateway Using Jumper Wires To Establish 3-Pair Modularity

‘‘3-Pair Modularity for Trunk Pairs for 1-Pair Trunks’’ on page 155 and ‘‘3-Pair Modularity for Trunk Pairs for 3-Pair Tie Trunks’’ on page 156 show trunk pairs connected to the media gateway with jumper wires to establish 3-pair modularity.

To connect the trunk pairs to the purple field:

1. Connect B25A cables between the network interface and the sneak fuse panels. See ‘‘3-Pair Modularity for Trunk Pairs for 1-Pair Trunks’’ on page 155.
2. Connect A25D/B25A cables from the sneak fuse panels to the 110-type terminal block-type connecting block connectors in the green field.
3. Connect 1-pair patch cords/jumper wires from each 110-type terminal block row in the green field to the 110-type terminal block rows in the purple field for 1-pair Central Office (CO) trunks or in ‘‘3-Pair Modularity for Trunk Pairs for 3-Pair Tie Trunks’’ on page 156 for 3-pair tie trunks.

3-Pair Modularity for Trunk Pairs for 1-Pair Trunks

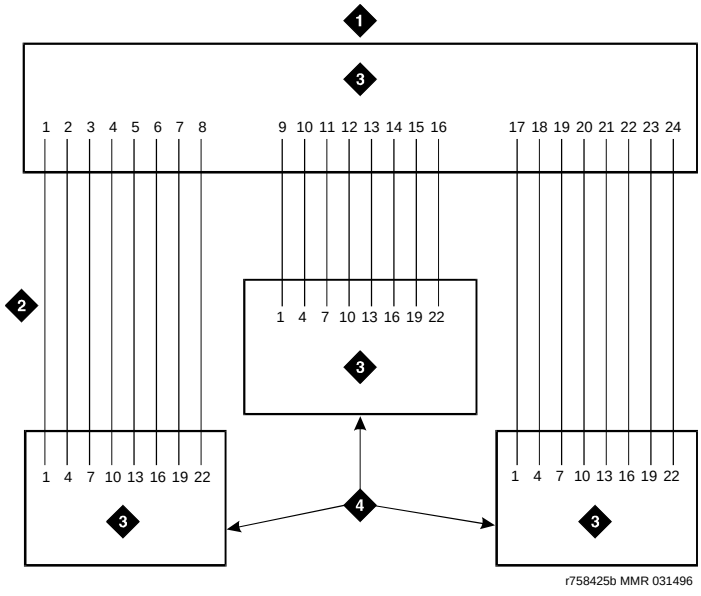


Figure notes

1	Green Field	**3**	Pairs
2	1-Pair Jumpers	**4**	Purple Field

3-Pair Modularity for Trunk Pairs for 3-Pair Tie Trunks

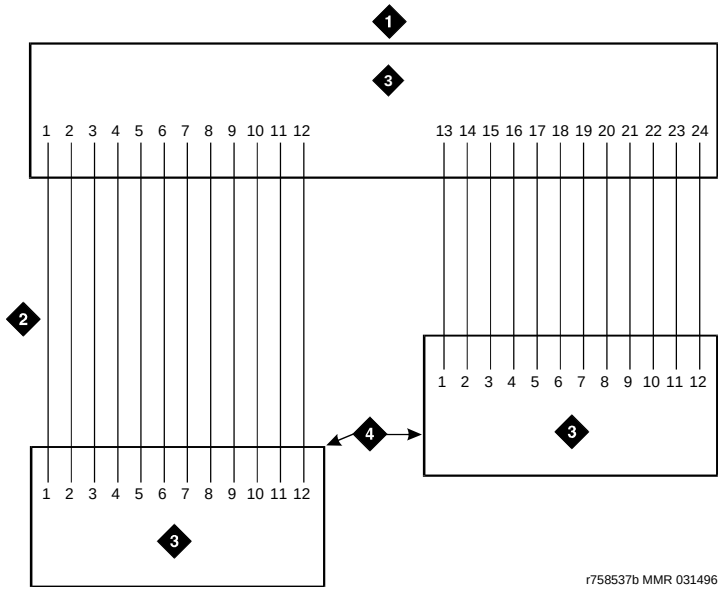


Figure notes

1	Green Field	**3**	Pairs
2	1-Pair Jumpers	**4**	Purple Field

Install Cables Between Media Gateway and MDF

1 Install D rings on the wall between the cable slack manager and the terminal/connecting blocks mounted on the MDF.

2 Install a self-adhesive port label on the back of each connector on the connector cable. Position the labels so the media gateway connector retainers do not cover them.

3 At the rear of the media gateway, connect 1 end of the connector cable to the assigned connector.

4 Route the cable down the rear of the media gateway, through the cable slack manager, and to the MDF.

5 At the MDF, connect the other end of the cable to the assigned terminal/ connecting block connector.

6 Store the cable slack in the cable slack manager.

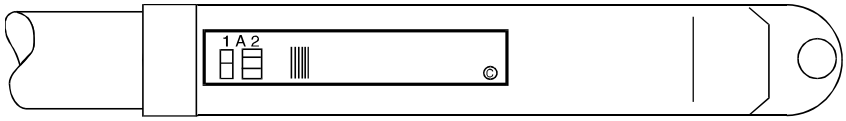
7 Repeat Steps 2 through 6 until all cables are installed.

Install Connector Cables Between Auxiliary Cabinet and MDF

Auxiliary equipment that connects to the MDF can be mounted inside the Auxiliary cabinet. The equipment connects to an ED-1E1443-10 (Group 1) intraconnection panel mounted in the cabinet. This intraconnection panel consists of a 110-type 100-pair wiring block. Auxiliary equipment is connected to the 110-type wiring block. The wiring block is pre-wired to four 25-pair female connectors mounted on the outside rear of the cabinet.

1. Install “D” rings on the wall between the cable slack manager and the terminal/connecting blocks mounted on the MDF.
2. Install a self-sticking port label on the rear of each connector on the B25A connector cable. See ‘‘Self-Stick Label on 25-Pair Cable Connector’’ on page 131.
3. Labels should be positioned so they will not be obscured by the cabinet connector retainers.
4. At the rear of the Auxiliary cabinet, connect 1 end of the connector cable to the assigned connector.
5. Route the cable down the rear of the cabinet and through the cable slack manager to the MDF.
6. At the MDF, connect the other end of the cable to the assigned terminal/connecting block connector.
7. Store the excess cable in the cable slack manager.
8. Repeat Steps 2 through 6 until all cables are installed.

Self-Stick Label on 25-Pair Cable Connector



lbdf25p LJK 101596

Mount 110A- or 110P-type terminal blocks on the wall

The 110A-type terminal blocks can be stacked in almost any arrangement at any height or location on the wall. One arrangement is shown in ‘‘110A-Type Terminal Blocks (300-Pair)’’ on page 159. The distance between the mounting screw holes on the terminal blocks is 10.8 in. (27.4 cm). If a vertical patch cord trough is used, the distance between the mounting screw holes is 5.31 in. (13.3 cm).

With 110P-type terminal blocks, the first block of the trunk/auxiliary field is aligned with the left side of the media gateway. See ‘‘110P-Type Terminal Blocks (900-Pair)’’ on page 160. This arrangement allows for growth on the right side of the MDF.

1. Route the cables from the rear of the media gateway stack to the MDF via the ‘‘Cable Slack Manager’’ on page 134. See ‘‘Install Cable Slack Managers’’ on page 162.
2. If you are installing 300-pair terminal blocks, draw a level horizontal line on the wall 47.5 in. (1.2 m) above the floor. See ‘‘110A-Type Terminal Blocks (300-Pair)’’ on page 159.

   If you are installing 900-pair terminal blocks, draw a level horizontal line on the wall 23 in. (58.4 cm) above the floor. See ‘‘110P-Type Terminal Blocks (900-Pair)’’ on page 160.
3. To mount the first trunk/auxiliary field terminal block, partially install 2 3/4-in. #12 wood screws, 7-11/16 in. (19.5 cm) apart on the left side of the horizontal line on the wall.
4. Slide the bottom terminal block ft onto the mounting screws and mark the upper mounting screw locations.
5. Remove the terminal block and partially install the upper mounting screws.
6. Place the terminal block on the mounting screws and tighten the screws.
7. If installing a vertical patch cord trough, partially install the first screw for the patch cord trough, on the line, 7/8-in. (2.2 cm) to the right of the previous screw. Partially install the second mounting screw 5.31 in. (13.5 cm) to the right of the screw just installed. Repeat Steps 4, 5, and 6.
8. If another trunk/auxiliary field terminal block is to be installed, partially install the first screw for the terminal block, on the line, 7/8-in. (2.2 cm) to the right of the previous screw. Partially install the second mounting screw 7-11/16 in. (19.5 cm) to the right of the screw just installed. Repeat Steps 4, 5, and 6.
9. If a horizontal patch cord trough is to be installed, install it, on the line, between the trunk/auxiliary field and the distribution field.
10. To install the first distribution field terminal block, partially install 2 3/4-in., #12 wood screws, 7-11/16 in. (19.5 cm) apart on the line, to the right of the vertical patch cord trough. Repeat Steps 4, 5, and 6.

11 If installing another distribution field terminal block, partially install the first screw for the terminal block, on the line, 7/8-in. (2.2 cm) to the right of the previous screw. Partially install the second mounting screw 7-11/16 in. (19.5 cm) to right of the screw just installed. Repeat Steps 4, 5, and 6.

12 If installing a vertical patch cord trough in the distribution field, repeat Step 6.

13 Repeat Steps 11 and 12 until all the terminal blocks and vertical patch cord troughs in the distribution field are installed.

110A-Type Terminal Blocks (300-Pair)

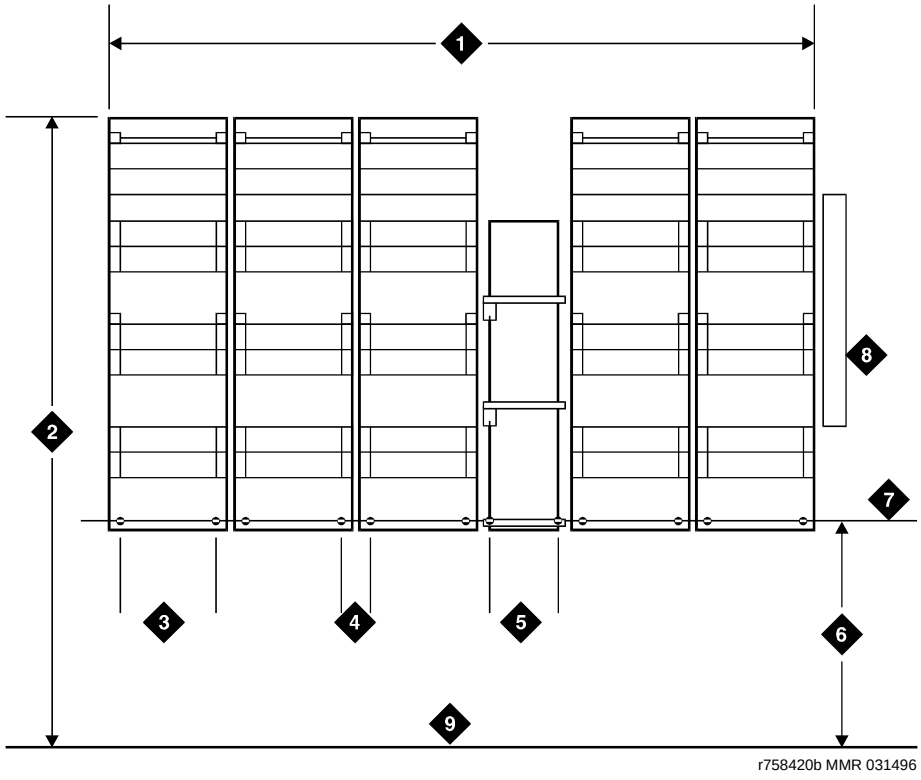


Figure notes

1 4 ft (1.22 m)
2 6.6 ft (2 m)
3 7.68 in. (19.5 cm)
4 7/8-in. (2.22 cm)
5 5.31 in. (13.5 cm)
6 47.5 in. (120.6 cm)
7 Horizontal Line
8 AC Power Strip
9 Floor Line

110P-Type Terminal Blocks (900-Pair)

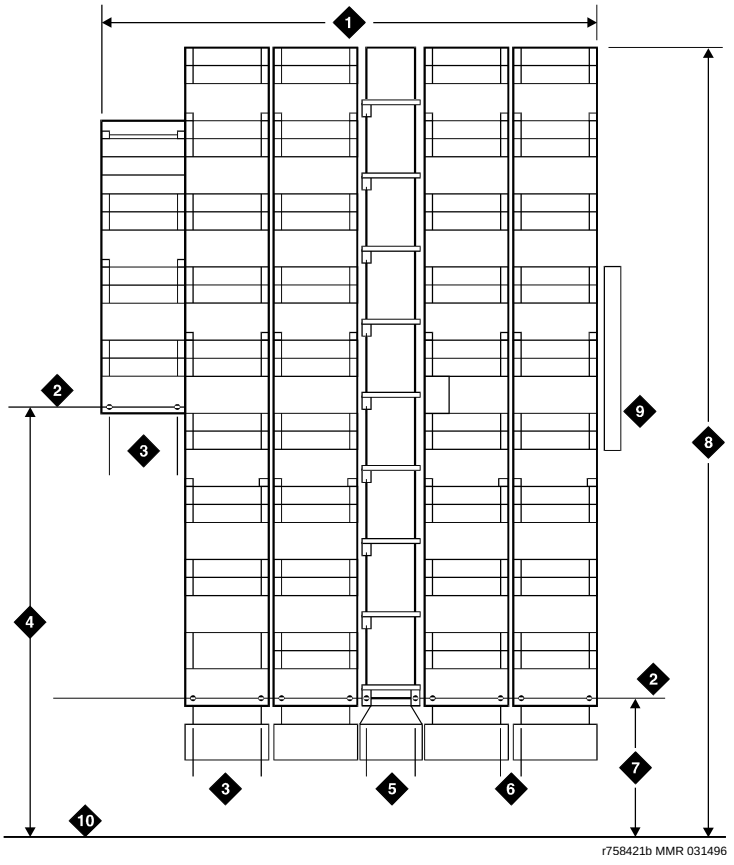


Figure notes

1	4 ft (1.22 m)	**6**	7/8-in. (2.22 cm)
2	Horizontal Line	**7**	23 in. (58.4 cm)
3	7.68 in. (19.5 cm)	**8**	8 ft (2.43 m)
4	47.5 in. (120.6 cm)	**9**	AC Power Strip
5	5.31 in. (13.5 cm)	**10**	Floor Line

Mount 110P-type terminal blocks on a frame

The 900-pair 110P-type terminal blocks and the associated patch cord troughs can also be mounted on a free-standing, floor-mounted 1110A2 Apparatus Mounting Frame. See ‘‘1110A2 and 1110C1 Apparatus Mountings’’ on page 161.

Each 1110A2 provides the space to mount 5 terminal blocks/patch cord troughs on each side of the frame. A cable support structure, apparatus mounting 1110C1, mounts directly on top of the 1110A2 and provides support for all cables routed to and from the frame. See "Apparatus Mounting Frame Ordering Information" on page 161

1110A2 and 1110C1 Apparatus Mountings

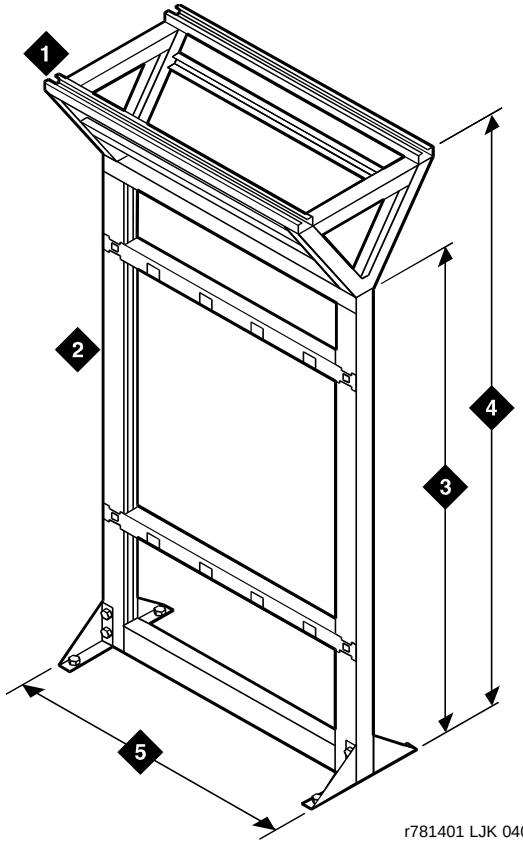


Figure notes

1	1110C1 Apparatus Mounting	**4**	88.5 in. (225 cm)
2	1110A2 Apparatus Mounting	**5**	43.5 in. (110.5 cm)
3	76 in. (193 cm)		

Apparatus Mounting Frame Ordering Information

Code Number	Description	Comcode
1110A2	Apparatus Mounting Frame	104032495
1110C1	Cable Support Assembly	104175120
1110A1	End Dress Panel	104176268
2110A1	Top Dress Panel	104176276
2110B1	Bottom Dress Panel	104176284

Install Cable Slack Managers

1. Place the Z113A Cable Slack Manager against the wall under the MDF. See “Cable Routing Through Cable Slack Manager (SCC)” on page 163. Align the left side of the cable slack manager with the first terminal block of the trunk/auxiliary field.
2. Place the next cable slack manager beside the previously installed unit. Align the tabs and interlocks and snap the units together.
3. Repeat Step 2 until all cable slack managers are installed.

NOTE:
Nine 1/4-in. holes (0.63 cm) are provided in a cable slack manager base if earthquake mounting is required. If a base is mounted on an uneven floor, shims may be required for leveling and to assure proper fit of the covers.

Holes are provided in the sides of the base for bolting cable slack manager together. Bolts and shims must be obtained locally.

4. The S8700 Multi-Connect configuration cables will route through the cable slack manager as shown. Complete cable routing is covered later in this chapter.

Cable clamps are required in installations with cable slack managers. At the rear of the media gateways, install 2 cable clamps using the screws provided. These clamps hold the 25-pair input/output or MDF cables in place. “Cable Routing Through Cable Slack Manager (MCC)” on page 162 and “Cable Routing Through Cable Slack Manager (SCC)” on page 163 show cable clamp placement and cable routing.

Cable Routing Through Cable Slack Manager (MCC)

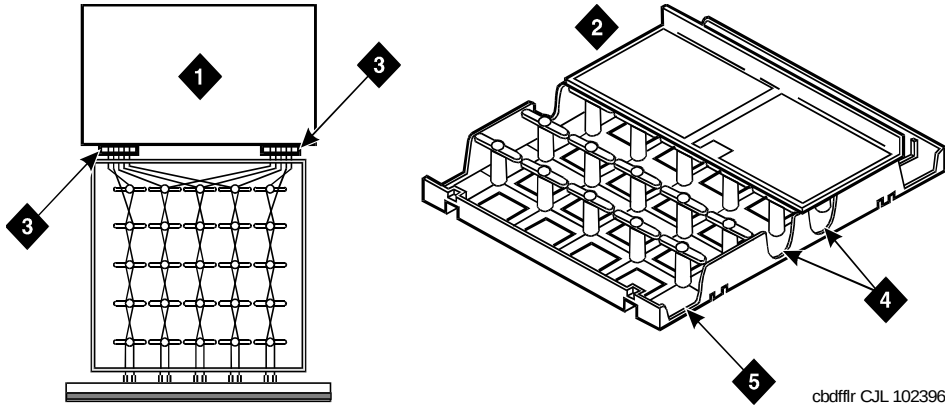


Figure notes

1. Top of Media Gateway
2. Cable Slack Manager
3. Cable Clamp
4. Spare Center Troughs
5. Media Gateway Trough for Port Cables

Cable Routing Through Cable Slack Manager (SCC)

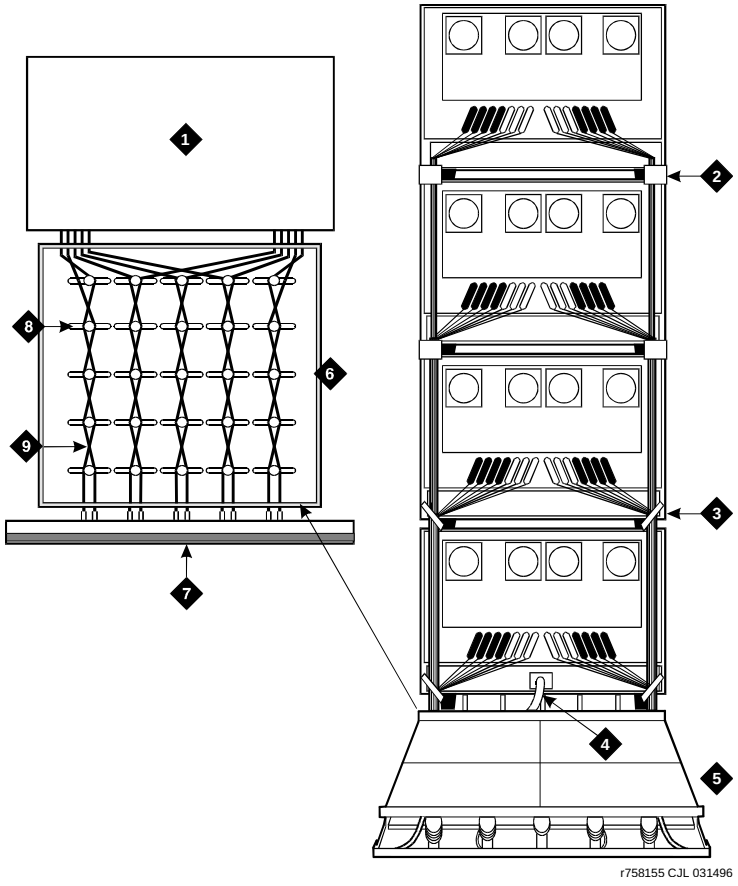


Figure notes

1 Top of Media Gateways

2 Cable Clamps

3 Cable Ties (Optional)

4 Power Cord

5 Cable Slack Manager

6 Cable Slack Manager (Cover Removed)

7 Main Distribution Frame (MDF)

8 Route Cables Along Path Shown

9 Port Cables

Install Sneak Fuse Panels

(For general information, see ‘‘Sneak Fuse Panels’’ on page 127.)

The ‘‘Model 507B Sneak Fuse Panel’’ on page 164, or equivalent, is recommended for sneak current protection. The panel contains two 25-pair connectors, fuse removal tool, and fifty 220029 sneak fuses (and two spares). See ‘‘Sneak Fuse Connector Pinout’’ on page 165 for pinout data.

1. Locate the 507B near the network interface or the Main Distribution Frame (MDF).
2. Hold the panel against the mounting surface and mark the mounting screw locations. Drill pilot holes at the marked locations and partially install a locally obtained #12 x 3/4-inch screw into the two bottom mounting slots.
3. Slide the sneak fuse panel onto the mounting screws and tighten the screws securely.
4. Install a locally obtained #12 x 3/4-inch screw into the top two mounting slots and tighten securely.
5. Repeat the procedure for each sneak fuse panel.
6. Secure the B25A cable to the panel with the captive screw on the connector and a supplied cable tie.

Model 507B Sneak Fuse Panel

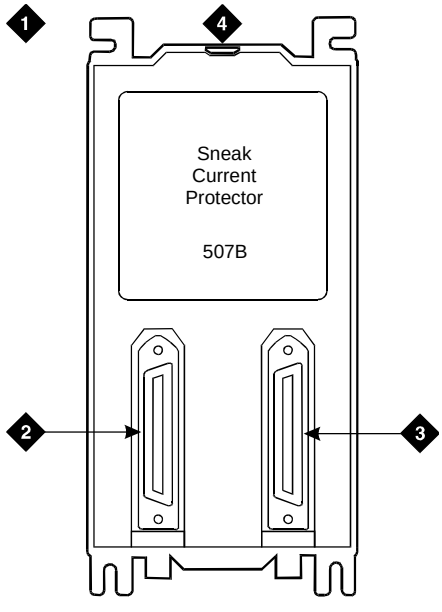


Figure notes

1. Sneak Fuse Panel
2. 25-Pair Male Connector (In)
3. 25-Pair Female Connector (Out)
4. 220029 Fuses (Inside Panel). Use small screwdriver to pry top cover off.

Sneak Fuse Connector Pinout	
Connector Pin Numbers	**Pair/Fuse Number**
26/1	1
27/2	2
28/3	3
29/4	4
30/5	5
31/6	6
32/7	7
33/8	8
34/9	9
35/10	10
36/11	11
37/12	12
38/13	13
39/14	14
40/15	15
41/16	16
42/17	17
43/18	18
44/19	19
45/20	20
46/21	21
47/22	22
48/23	23
49/34	24
50/25	25

Install Coupled Bonding Conductor

The ‘‘Coupled Bonding Conductor’’ on page 167 (CBC) connects to the single-point ground block and runs adjacent to pairs in an associated telecommunications cable. The mutual coupling between the bonding conductor and the pairs reduces potential differences in terminating equipment.

1. Cut a 10 AWG (#25) (2.5 mm^2) wire long enough to reach from the S8700 Multi-Connect configuration’s single-point ground block or DC power media gateway Ground Discharge Bar to the MDF CBC block.
2. Connect one end of the 10 AWG (#25) (2.5 mm^2) wire to the single-point ground block (or Ground Discharge Bar).
3. Route the wire next to the 25-pair cables connecting to the trunk/auxiliary (purple) field.
4. Tie wrap the 10 AWG (#25) (2.5 mm^2) wire to the 25-pair cables.
5. Connect the 10 AWG (#25) (2.5 mm^2) wire to the MDF CBC ground block.
6. Repeat the above steps for each CBC ground wire installed.

Coupled Bonding Conductor

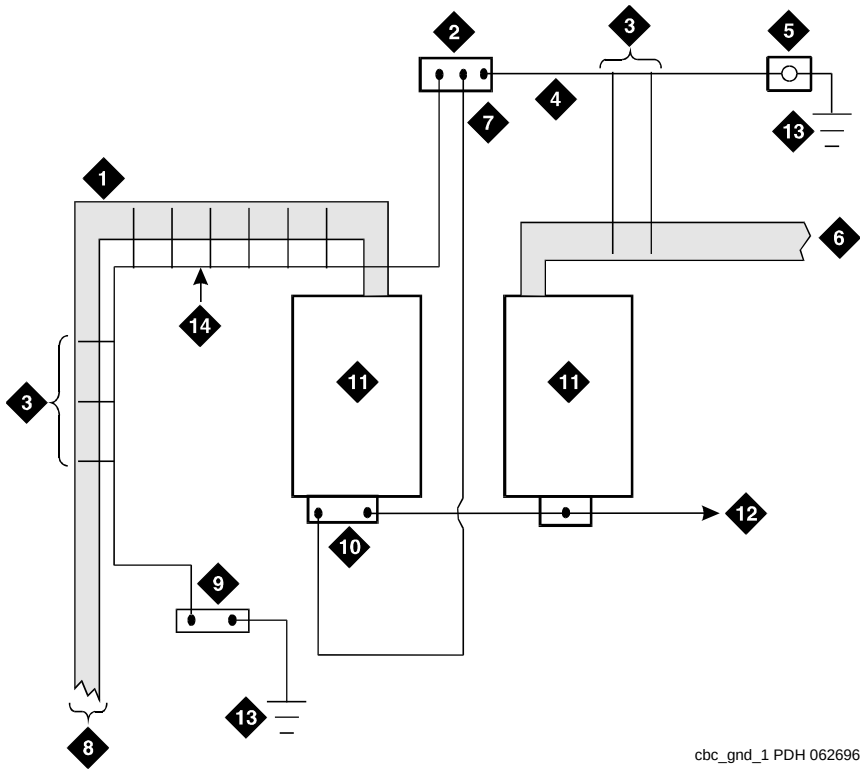


Figure notes

1 25-Pair Tip & Ring Cables to Media Gateways

2 Coupled Bonding Conductor (CBC) Terminal Block

3 Tie Wraps

4 Cable Shield or Six Spare Pairs

5 Ground on Carbon Block Protector or Equivalent

6 Trunk Cable to Network Interface

7 10 AWG (#25) (2.5 mm^2) Wire

8 To Network Media Gateways

9 Battery Plant Ground Discharge Bar for Single-Point Ground

10 Cross-Connect Ground Block

11 Main Distribution Frame (MDF)

12 To Other Cross-Connect Ground Blocks

13 Approved Ground

14 Coupled Bonding Conductor (CBC)

Connecting to the Customer's Network

The S8700 Media Server for IP Connect and Multi-Connect Configurations connect directly to the customer's network in several ways. They can connect through the

- "Avaya™ S8700 Media Server" on page 168
- "TN799DP Control LAN" on page 169
- "The TN2302AP IP Media Processor" on page 171
- "TN2501 Voice over the LAN (VAL)" on page 178
- "Avaya R300 Remote Office Communicator" on page 185.

Avaya™ S8700 Media Server

In a typical configuration you connect to the network through a port on the back of the Avaya™ S8700 Media Server, using a standard CAT5 cable with RJ45 connectors on each end. Typically for an IP Connect configuration, you connect through port 1 (Eth0). (See "CAT5 cable connected to a port on the back of the Avaya™ S8700 Media Server" on page 168). For a Multi-Connect configuration, you connect through one of the available 4 ports on the NIC card, typically the one corresponding to Eth4.

The other end of the cable connects to an Ethernet switch (router), hub, or token ring.

CAT5 cable connected to a port on the back of the Avaya™ S8700 Media Server

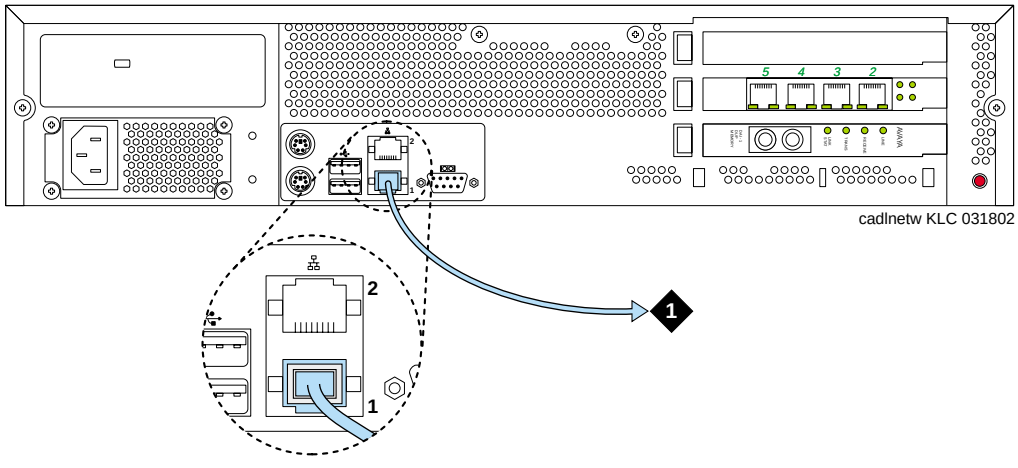


Figure notes

1 To network

TN799DP Control LAN

The TN799DP Control LAN circuit pack serves two purposes:

- A connection for the signaling (telephone) network to the customer's data network for IP telephones.
- A source board for downloading firmware to circuit packs having the "P" designation.
- An IP interface for adjuncts such as Intuity Audix
- An IP interface for DCS connection with another Avaya configuration.

See the *Avaya MultiVantage Solutions Hardware Guide* for more information.

Installing a TN799DP C-LAN

Installing the cables

1 Install a cable from the cabinet to the network through a hub or 110 (purple) wall field as required. Connect the 259A adapter to the Amphenol connector corresponding to the slot that the C-LAN circuit pack is in. See ''Cable Connection for C-LAN'' on page 170. For a pinout of TN799DP, see ''TN799DP Pinout'' on page 170.

Cable Connection for C-LAN

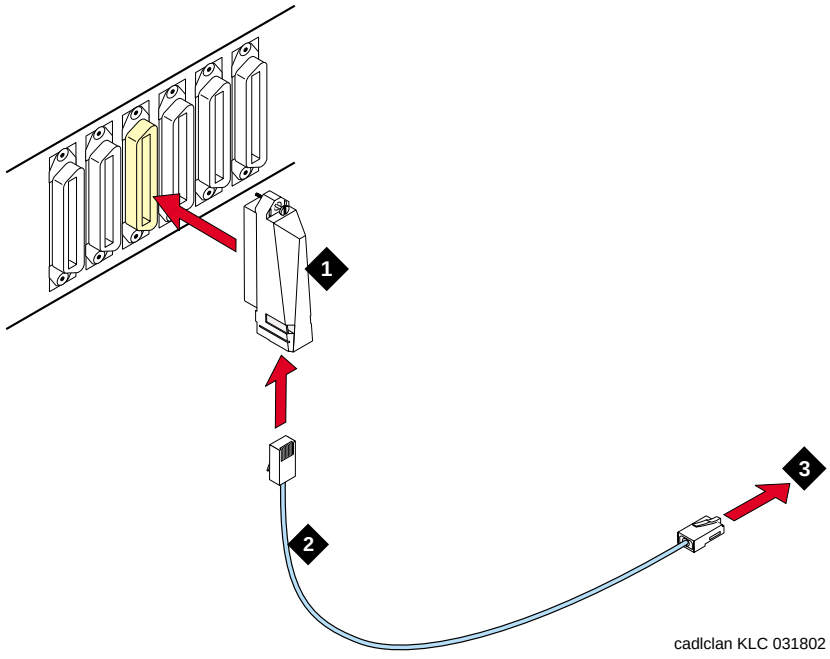


Figure notes

1 259A Connector

2 DW8 Cable

3 To network

TN799DP Pinout

Backplane Pin	25-Pair Wire Color	Lead Name	Peripheral Connector Pin
103	White/Orange	TD+	27
003	Orange/White	TD-	2
104	White/Green	RD+	28
004	Green/White	RD-	3

Administering the TN799DP

For administration, refer to the *Administration for Network Connectivity for Avaya MultiVantage Software*.

The TN2302AP IP Media Processor

The TN2302AP IP Media Processor provides on interface between a customer's IP network and Avaya media gateways. This interface is used to transport voice and FAX between the media gateways and IP devices such as H.323 V2 compliant endpoints and other Avaya telephone systems.

NOTE:
The P board suffix designation means the circuit pack is firmware-downloadable. Refer to Upgrading the Avaya S8700 Media Server Configurations, Upgrade Selected Port Circuit Pack Firmware for more information.

For information on TN802 IP Trunking, refer to the *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multicarrier Cabinets*.

IP Media Processor

The following sections describe the process for

- ''Preparing for the installation'' on page 171
- ''Installing the TN2302AP IP Media Processor'' on page 173

For administration, refer to the *Administration for Network Connectivity for Avaya MultiVantage Software*.

Preparing for the installation

In addition to the TN2302AP IP Media Processor, you must also install and administer a C-LAN circuit pack (TN799DP). For C-LAN administration, refer to *Administration for Network Connectivity for Avaya MultiVantage Software*.

Each TN2302AP can support between 32 and 64 voice channels, depending on the codecs used.

Check your onsite equipment

Have the following equipment on site before your shipment arrives:

- An unoccupied port slot in the media gateway for each TN2302AP IP Media Processor

NOTE:
The TN2302AP consumes 16 W of power per slot compared with an average of 15 W per slot. Do not fill every available slot in a given media gateway with them.

- An unoccupied port slot for the TN799DP.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network (LAN) for the TN2302AP.

- A 10 BaseT Ethernet connection into your LAN for the TN799DP.
- Two or more valid, unused IP addresses on the network (one for each TN2302AP and one for each C-LAN) that can be assigned to the IP Media Processor server. You also need the subnet mask and default gateway.

NOTE:
Get this information from the network administrator or refer to the job aid entitled *Pre-Installation Network Worksheet—S8700 IP Connect* or *Pre-Installation Network Worksheet—S8700 Multi-Connect.*

Check your shipment

When the order arrives at your site, check the contents (see ''Required Hardware'' on page 172).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the items in ''Required Hardware'' on page 172 for each TN2302AP IP Media Processor ordered.
3. Read and follow any directions inserted into the package by the factory.

Required Hardware

Comcode/Code	Description	Quantity
108312612	TN2302AP IP Media Processor	1
848525887	TN2302AP Amphenol Adapter[1]	1
108525528	TN799DP C-LAN circuit pack. One TN799DP supports more than one TN2302AP.	1
102631413	ADPTR-259A connector	1

[1]The adapter has an amphenol connector on one side and an RJ45 connector on the other for connecting to the network. See ''TN2302AP Amphenol Adapter'' on page 173.

NOTE:
The customer must provide one CAT5 or better cable for each TN2302AP.

TN2302AP Amphenol Adapter

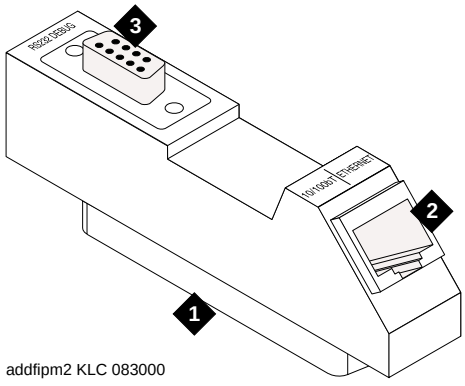


Figure notes

1	Amphenol connector to backplane connector corresponding to TN2302AP slot	**2**	To network
		3	9-pin connector for maintenance

Installing the TN2302AP IP Media Processor

Connect the cables for TN799DP

1 Determine into which port slots you are putting the TN799DP C-LAN circuit packs.

From the rear of the media gateway:

2 Connect a 259A connector to the Amphenol connector corresponding to each TN799DP slot.

3 Connect one end of each DW8 cable to each 259A connector.

Connect the cables for TN2302AP

1 Determine into which port slots you are putting the TN2302AP IP Media Processor circuit packs.

From the rear of the media gateway:

2 Connect the amphenol connector on the adapter to the Amphenol connector corresponding to each TN2302AP slot.

Connect the Ethernet

1 Connect the network cable(s) to the ETHERNET connector on the TN2302AP backplane adapter(s).

NOTE:
You need a CAT5 or better cable for 100-Mbyte operation.

Install the circuit packs

CAUTION:
When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

NOTE:
The TN799DP and TN2302AP circuit packs are hot-swappable, so you do not need to power down the media gateway to install them.

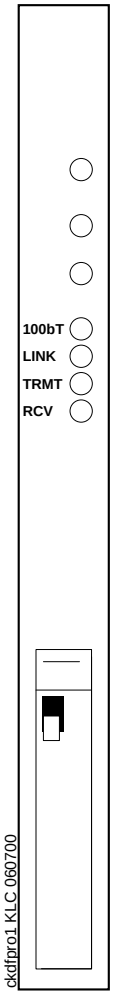
NOTE:
To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

Use Avaya Site Administration for the administration.

1. Insert the TN799DP circuit pack into the port slot identified earlier.
2. Insert the TN2302AP IP Media Processor into the port slot you reserved for it and seat it properly (See ''TN2302AP IP Interface faceplate'' on page 175).

   When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.
3. Log in as **craft**.
4. Type **list configuration all** and press **Enter** to verify that the MultiVantage software recognizes the TN2302AP circuit packs.

TN2302AP IP Interface faceplate



Initial Administration Steps for C-LAN and IP Media Processor

NOTE:
Refer to the *Administration for Network Connectivity for Avaya MultiVantage Software* for specific information.

1. Type **change node-names** and press **Enter**.
2. On page 2, type in the node names and IP addresses for the TN799DP and the TN2302AP.

NOTE:
The customer or design team provides the actual name and address. Suggest a generic name and not one tied to the circuit pack.

```
change node-names ip                                          Page   1 of   1
                                  IP NODE NAMES
    Name                 IP Address            Name               IP Address
cognac               172.16 .19 .2                                   .   .   .
default              0  .0  .0  .0                                  .   .   .
medpro               192.168.1  .82                                 .   .   .
prowler              192.168.1  .83                                 .   .   .
prowler1             172.16 .19 .221                                .   .   .
prowler2             172.16 .19 .222                                .   .   .
prowler3             172.16 .19 .223                                .   .   .
prowler4             172.16 .19 .224                                .   .   .
prowler5             172.16 .19 .225                                .   .   .
sr1clan1             192.168.1  .80                                 .   .   .
sr1clan2             172.16 .19 .220                                .   .   .
traf-clan            172.16 .19 .118                                .   .   .
                        .   .   .                                   .   .   .
                        .   .   .                                   .   .   .
                        .   .   .                                   .   .   .
                        .   .   .                                   .   .   .
( 12 of 12  administered node-names were displayed )
Use 'list node-names' command to see all the administered node-names
```

3 Type **display circuit-pack** and press **Enter**. Verify that the TN2302AP shows up in the Code column.

4 Type **change ip-interfaces** and press **Enter**.

```
change ip-interfaces                                          Page   1 of  15

                                  IP INTERFACES

Enable                                                                    Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address Rgn
   n   MEDPRO 01B11 TN2302   prowler         255.255.255.0   172.16 .23 .254 1
   y   C-LAN  05B11 TN799  C sr1clan2        255.255.248.0   172.16 .23 .254 3
   y   MEDPRO 07B09 TN2302   prowler1        255.255.248.0   172.16 .23 .254 3
   y   MEDPRO 07B10 TN2302   prowler2        255.255.248.0   172.16 .23 .254 3
   y   MEDPRO 03A11 TN2302   prowler3        255.255.248.0   172.16 .23 .254 2
   y   MEDPRO 05A12 TN2302   prowler5        255.255.248.0   172.16 .23 .254 2
   y   C-LAN  01A11 TN799  C traf-clan       255.255.248.0   172.16 .23 .254 2
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .

n 255.255.255.0      .   .   .
```

NOTE:
The customer provides the IP address, subnet mask, and gateway address.

5 Type in the following information for the TN2302AP IP Media Processor and TN799DP C-LAN:

NOTE:
Enable the Ethernet port last, after you have filled in the information in the other fields.

- Set `Slot` field to ***UUCSS***, where ***UUCSS*** is the cabinet, carrier, and slot.
- The `Code` and `SFX` fields are automatically populated with TN799DP and TN2302AP.
- In the `Node Name` field type the same node name entered on the Node Name screen.
- In the `Subnet Mask` field use the default setting unless you are given a different subnet mask.
- In the `Gateway Address` field use the address you are given or leave blank.
- Set the `Net Region` field to **1** unless you are given a different number.
- Set the `Enable Eth Pt` field to **y**

6 Press **Enter** to save the information and effect the new settings.

Refer to the *Administration for Network Connectivity for Avaya MultiVantage Software* for more information on these administration steps and for the steps to administer IP Softphones and H.323 trunks.

Test the External Connection to the LAN

To test the external IP connections, ping the C-LAN or IP Media Processor server and ping a known computer connected to the network. If everything is configured correctly, the `Result` column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1 Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter.** The variable ***nnn.nnn.nnn.nnn*** is the IP address of the TN2302AP IP Media Processor and ***UUCSS*** is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

```
ping ip-address 192.168.10.21

                          PING RESULTS

 End-pt IP        Port      Port Type  Result    Time(ms)  Error Code

 192.168.10.21    01A13      MEDPRO   PASS       10        1124
```

2 Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter.** The variable ***nnn.nnn.nnn.nnn*** is the IP address of the customer's gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

3 Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter.** The variable ***nnn.nnn.nnn.nnn*** is the IP address of another computer beyond the gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

The TN2302AP IP Media Processor is now installed in the media gateway and connected to the IP network.

TN2501 Voice over the LAN (VAL)

The TN2501 Voice over the LAN (VAL) is an integrated announcement circuit pack that

- offers up to 1 hour of announcement storage capacity.
- requires shorter backup and restore times.
- is firmware downloadable.
- plays announcements over the TDM bus.
- has 33 ports, including
  - — 1 dedicated telephone port for recording and playing back announcements (port number 1).
  - — 1 ethernet port (port number 33).
  - — 31 playback ports (ports 2–32).
- 10/100 Mb Ethernet interface, allowing announcement and firmware file portability over your LAN (FTP server functions).
- supports *.wav announcement files.

Important File Specifications

Voice Announcement over LAN (VAL) requires that announcement files are in the following *.wav formats:

- CCITT A-Law or CCITT μ-Law (mu-Law) companding format (do not use PCM)
- 8-kHz sample rate
- 8-bit resolution (bits per sample)
- Mono (channels = 1)

You must convert other wave (*.wav) file formats to those listed above. Telephone access creates the correct file formats.

Caveats

Remember the following points when using the TN2501AP integrated announcement circuit pack for the first time:

- Despite the feature name, announcements are not played over the LAN but can be transferred to and from the TN2501AP circuit pack over the LAN.
- You cannot save or restore announcements to a TN2501AP circuit pack to or from
  - — a TN750C circuit pack
  - — flashcards
  - — tape
  - — magneto optical disks.

Installing VAL

NOTE:
To install a TN2501AP, make sure that the system is enabled for TN2501AP (VAL) boards. If the **Maximum VAL boards** field on the Customer Options screen is set to 0, then you need to obtain and install a new license file before you can install the card.

Installing the pack includes:

- ''Verifying the required hardware'' on page 179
- ''Installing the TN2501AP Circuit Pack'' on page 181
- ''Configuring the MultiVantage Software for the TN2501AP'' on page 182

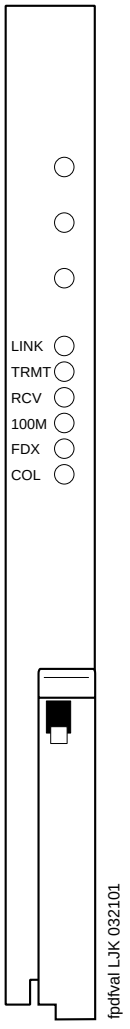
Verifying the required hardware

Make sure that you have the required hardware:

- TN2501AP VAL circuit pack (108772583). See ''Faceplate of VAL circuit pack'' on page 180.

- 10/100BaseT backplane adapter (848525887—same one used for the IP Media Processor). See ''Backplane Adapter'' on page 181.
- LAN cable with RJ45 connectors (customer supplied).

Faceplate of VAL circuit pack



Backplane Adapter

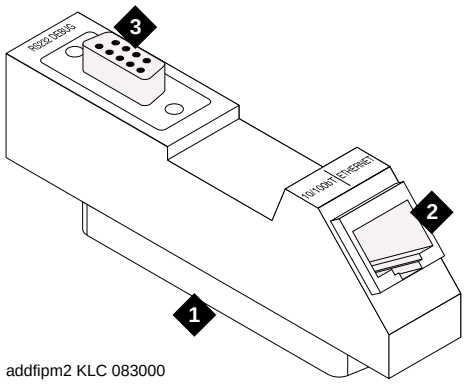


Figure notes

1 Amphenol connector attaches to the back of the media gateway, corresponding to the TN2501AP circuit pack slot.

2 RJ45 LAN cable connection

- 10 Mbps uses Category 3 cable.
- 100 Mbps uses Category 5 cable.

3 This connector is not used for VAL.

Installing the TN2501AP Circuit Pack

WARNING:
To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.

1 Insert the circuit pack into any port slot and close the latch securely.

At first, the red and green LEDs are on steady, then the green LED flashes. If there are announcements on the circuit pack, the amber LED flashes while the announcements are copied from FLASH to RAM. After about 3-5 minutes, all of the top 3 LEDs go out, although the time is longer if there are announcements already recorded on the circuit pack.

NOTE:
If the TN2501AP circuit packs are at the MultiVantage software limit and you insert a VAL circuit pack, the red LED on that circuit pack stays on, indicating that the MultiVantage software does not accept it.

2 Connect the backplane adapter to the Amphenol connector on the back of the media gateway corresponding to the TN2501AP circuit pack slot.

3 Connect the LAN cable to the RJ-45 connector on the Backplane Adapter.

Configuring the MultiVantage Software for the TN2501AP

After you have installed the hardware, to support an FTP session you must

- "Administer the IP connections" on page 182.
- "Test the IP connections" on page 185.

Administer the IP connections

Use Avaya Site Administration for this administration.

Verify circuit pack location

1 Type **list configuration board *board-location*** and press **Enter**.

The System Configuration report appears. Use this report to ensure that the MultiVantage software recognizes the TN2501AP circuit pack after it is latched in the carrier slot.

```
list configuration board 1c08                                          page 1

                              SYSTEM CONFIGURATION

Board                                                    Assigned Ports
Number    Board Type              Code     Vintage    u=unassigned t=tti p=psa

01C08     VAL-ANNOUNCEMENT        TN2501AP HW00 FW001 01 02 03 04 05 06 07 08
                                                      09 10 11 12 13 14 15 16
                                                      17 18 19 20 21 22 23 24
                                                      25 26 27 28 29 30 31 32
                                                      U



Command successfully completed
```

2 Verify the following field values:

- Board Type shows **VAL-ANNOUNCEMENT**
- Code is **TN2501AP**

Administer the node names

1 Type **change node-names ip** and press **Enter**.

The IP Node Names screen appears. Use this screen to administer the circuit pack's node name.

```
change node-names ip                                    Page   1 of   1
                                  IP NODE NAMES
    Name              IP Address           Name              IP Address
Tiki                172.22 .22 .79                            .   .   .
cdr_1               192.168.22 .63                            .   .   .
default             0  .0  .0  .0                            .   .   .
iolan               172.22 .22 .68                            .   .   .
lulu_cl1            172.22 .22 .71                            .   .   .
lulu_cl2            172.22 .22 .77                            .   .   .
riki                172.22 .22 .20                            .   .   .
rsat4               172.31 .5  .49                            .   .   .
rsat5               172.23 .23 .40                            .   .   .
st10clan#1          192.168.22 .21                            .   .   .
st12clan            172.22 .22 .67                            .   .   .
st12prowler#1       172.22 .22 .75                            .   .   .
VAL#1               172.22 .22 .120                           .   .   .
                       .   .   .                              .   .   .
                       .   .   .                              .   .   .
                       .   .   .                              .   .   .
( 12 of 12  administered node-names are displayed)
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name
```

2 Type a unique name in the **Name** field.

This name is recognized only within the MultiVantage software and does not need to match the node name on your network.

3 Enter the **IP Address**.

Get this information from the network administrator or refer to the job aid entitled *Pre-Installation Network Worksheet—S8700 IP Connect* or *Pre-Installation Network Worksheet—S8700 Multi-Connect.*

4 Press **Enter** to save the changes.

Administer the IP interfaces

1 Type **change ip-interfaces** and press **Enter**.

The IP Interfaces screen appears. Use this screen to administer an IP interface, which associates the circuit pack with an IP address.

```
change ip-interfaces                                    Page   1 of   6

                                  IP INTERFACES

Enable                                                                  Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address Rgn
   y   C-LAN  01C16 TN799  C st12clan        255.255.0  .0   172.22 .22 .254 1
   y   MEDPRO 01E04 TN2302   st12prowler#1  255.255.0  .0   172.22 .22 .254 1
   y   VAL    01C08 TN2501   VAL#1           255.255.0  .0   172.22 .22 .254
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
```

2 Set the **Enable Eth Pt** field to **y**.

3 Set the **Type** field to **VAL**.

4 Type the circuit pack location in the **Slot** field (UUCSS).

If a TN2501AP circuit pack is not at this location when you submit the screen, the software prompts you to enter a VAL circuit pack location.

5 In the **Node Name** field, enter the Node Name you entered in step 2.

If you press Help, a list of administered node names appears (including the name you administered with the change node-names ip command), and you can select from the list.

6 Set the **Subnet Mask** field according to your network requirements.

Gateway Address is usually the same as the TN2501AP circuit pack's IP address, usually with the fourth octet changed. Be sure to set this address according to your network requirements.

7 Press **Enter** to save the changes.

Administer the data module

1 Type **add data-module *extension*** and press **Enter**.

The Data Module screen appears. Use this screen to administer the data module that is associated with the TN2501AP ethernet port.

```
add data-module 30006                                  Page   1 of   1
                              DATA MODULE

  Data Extension: 30006           Name: VAL#2 Data Module
            Type: ethernet
            Port: 1b0333
            Link: 5




Network uses 1's for Broadcast Addresses? y
```

2 Set the **Type** field to **ethernet**.

3 Set the **Port** field to correspond to the circuit pack location.

The port number (final two digits) is always **33** for the TN2501AP circuit pack.

4 Set the **Link** field to an unassigned or next-available link number.

5 Set the **Network uses 1's for Broadcast Address** field according to the your network requirements.

6 Type a unique name in the **Name** field.

7 Press **Enter** to save your changes.

Administer IP routing (if used)

1 Type **add ip-route** and press **Enter**.

2 Administer IP routes to the TN2501AP circuit pack.

3 Press **Enter** to effect the changes.

Test the IP connections

1 Click **Start > Run** to open the Run dialog box.

2 Type **command** and press **Enter** to open an MS-DOS window.

3 Type **ping <*ipaddress*>**, where <*ipaddress*> is a known computer on the network and press **Enter** to verify connectivity.

4 Using ASA, type **status link** to test the new IP connections that you have administered.

Avaya R300 Remote Office Communicator

For information on the Avaya R300 Remote Office Communicator, refer to the documentation that comes with the R300 equipment.

Installing and Wiring Telephones

The wiring procedures are the same for most Avaya telephones and other equipment.

This task list provides wiring examples of similar installation procedures. These are examples only; actual wiring procedures may vary at each site.

After installing the hardware, the data for the telephone features must be administered. These procedures are provided in the *Administrator's Guide for Avaya MultiVantage Software*.

NOTE:
Refer to the *Installation for Adjuncts and Peripherals for Avaya MultiVantage Solutions* to install the necessary peripheral equipment.

Wiring Telephones

Task List: Wiring Examples and Wiring Procedures

- ‘‘Connect Telephones’’ on page 187
- ‘‘Analog Tie Trunk Example’’ on page 192
- ‘‘Digital Tie Trunk Example’’ on page 192
- ‘‘DS1 Tie Trunk Example’’ on page 193
- ‘‘Auxiliary Connector Outputs (MCC1 and SCC1 media gateways only)’’ on page 196
- ‘‘Three-Pair and Four-Pair Modularity’’ on page 199
- ‘‘Adjunct Power Connection Locations’’ on page 200
- ‘‘Attendant Console Example’’ on page 201
- ‘‘Connect External Alarm Indicators and Auxiliary Power’’ on page 204
- ‘‘Connect Power Distribution Unit External Alarm Wires’’ on page 205
- ‘‘Remote Access’’ on page 208
- ‘‘Off-Premises or Out-of-Building Stations’’ on page 209
- ‘‘Emergency Transfer Units and Associated Telephones’’ on page 214
- ‘‘808A Emergency Transfer Panel and Telephone Installation Examples’’ on page 215
- ‘‘Install External Ringing’’ on page 224
- ‘‘Install the Queue Warning Indicator’’ on page 225
- ‘‘Installing and Wiring Telephone Power Supplies’’ on page 226

Refer to the Job Aid entitled *Connector and Cable Diagrams (Pinout Charts)* PDF for information on pinouts.

Connect Telephones

Various analog, digital, and IP telephones can be connected to the media gateway. These telephones include:

- ‘‘Connectable Telephones and Consoles’’ on page 187
- ‘‘Connecting a Typical Telephone’’ on page 188
- ‘‘Connect Adjunct Power’’ on page 189
- ‘‘Connect an Analog Station or 2-Wire Digital Station’’ on page 190

Connectable Telephones and Consoles

The following telephones and consoles can connect to any Avaya media gateway.

Connectable Telephone and Consoles

Telephone and Console Models	Type
500/554 (rotary dial), 500 DMGC 2500/2554, 2500YMGK	Analog
3127 Avaya Soundstation: 3127-STD, -EXP, -APE, -APX	Analog
3127 Avaya Soundstation: 3127-DCS, -DDP, -DDX, -DPE, -DPX, -MIC, -PMI	Digital
46xx series: 4602, 4606, 4612, 4620, 4624, 4630	Internet Protocol (IP)
62xx series: 6210, 6211, 6218, 6219, 6220, 6221	Analog
64xx series: 6402/D, 6408D+, 6416D/D+M, 6424D+/D+M	Digital
71xxx series: 7101A, 7102A, 7103A, 7104A	Analog
81xx series: 8101/M, 8102/M, 8110/M	Analog
84xx series: 8405, 8410D, 8411, 8434DX	Digital
85xx series: 8510T, 8520T	ISDN-BRI
9040	Wireless
Enhanced Attendant Consoles: 302D	Digital

Connectable Telephone and Consoles — *Continued*

Telephone and Console Models	Type
606A1 CallMaster VI ACD Console	Analog
607A1 CallMaster V ACD Console	Digital
XM24 Expansion Module	Expansion
Softphones: Netmeeting H.323 IP Softphone CentreVu IP Agent Softconsole	Internet Protocol (IP)

Connecting a Typical Telephone

The 302C1/D Enhanced Attendant Console is used to describe a telephone connection typically used with the 84xx (4-wire) telephones.

The 302D does not require auxiliary power unless it has a 26C1 DXS console or Vacuum Fluorescent Display. The 302C1 attendant console always requires auxiliary (adjunct) power (-48 VDC). Power is connected to the console through Pins 7 and 8 of the information outlet. Only three consoles can be powered by the media gateway. When possible, the primary console should be powered from the media gateway so it has the same power failure backup as the media gateway.

The maximum cabling distance for the console powered from the media gateway is 350 feet (100 meters).

The general steps to connect a telephone are:

1. Choose a device to connect such as a 302D Attendant Console.
2. Choose the port circuit pack and its carrier and slot number, such as cabinet 1, carrier C, slot 02.
3. Choose a port circuit on the port circuit pack, such as Port 05.
4. Install cross-connect jumpers to wire the terminal to the port circuit pack. See ‘‘302D to 4-wire DCP Wiring’’ on page 189. This pinout is for the 4-wire Digital Line circuit pack.

CAUTION:
Do not use the 329A power unit for the attendant console. Use an 1151A1, 1151A2, 1145A, or MSP-1 power unit.

5. For terminals needing adjunct power, wire -48 VDC and ground to appropriate pins on the terminal. See ‘‘302D to 4-wire DCP Wiring’’ on page 189.

302D to 4-wire DCP Wiring

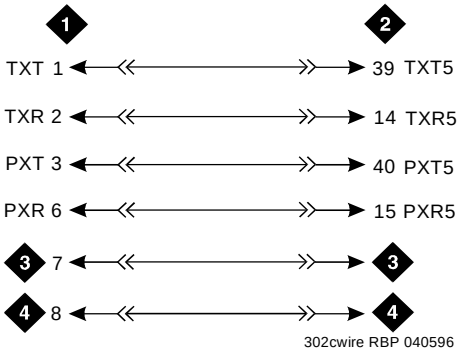


Figure notes

1	302D Attendant Console	**3**	-48 VDC From Adjunct Power
2	4-wire Digital Line Circuit Pack (Position 1C02)	**4**	Ground From Adjunct Power

Connect Adjunct Power

The 400B2 adapter is convenient for connecting local -48 VDC power to a modular plug. See ‘‘400B2 Adapter Connecting to a Modular Plug’’ on page 190.

Each port network can provide power for up to three attendant consoles. This source of power is preferred for the attendant consoles because it has the same battery backup as the media gateway. See ‘‘Auxiliary Connector Outputs (MCC1 and SCC1 media gateways only)’’ on page 196.

NOTE:
Adjunct power can be provided locally at the telephone or console by either the 1151A1 or 1151A2 power supply. Adjunct power can be provided from the equipment room or equipment closet with the 1145B power unit. Go to ‘‘Installing and Wiring Telephone Power Supplies’’ on page 226 for power supply information and installation procedures.

400B2 Adapter Connecting to a Modular Plug

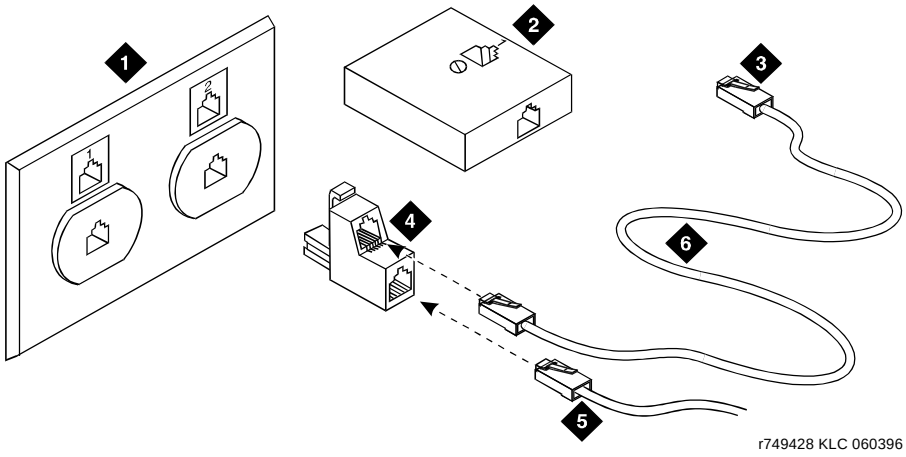


Figure notes

1	Flush-Mounted Information Outlet	**4**	400B2 Adapter
2	Surface-Mounted Information Outlet	**5**	To Telephone
3	To Individual Power Unit	**6**	Destination Service Access Point (DSAP) Power Cord

Connect an Analog Station or 2-Wire Digital Station

This example is typical of the 2-wire digital stations (2420, 64xx, 302D), 2-wire analog stations (500, 2500, 71xx), analog Central Office (CO) trunks, Direct Inward Dial (DID) trunks, and external alarms. See ‘‘2500-Type Analog Telephone Wiring’’ on page 191.

1. Choose a peripheral to connect (such as a 2-wire digital station).
2. Choose the port circuit pack to use and its carrier and slot number (from ‘‘Port Circuit Pack and Telephone Pin Designations’’ on page 191). For example: TN2183 Analog Line, Cabinet 1, Carrier C, Slot 1.
3. Choose a port circuit on the port circuit pack, for example port 3.
4. Install cross-connect jumpers to connect the pins from the 2-wire digital station to the appropriate pins on the port circuit pack.
5. Administer using *Administrator’s Guide for Avaya MultiVantage Software*.

2500-Type Analog Telephone Wiring

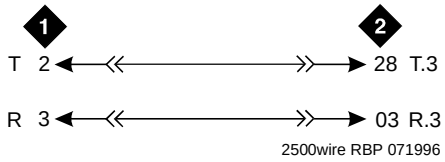


Figure notes

1 2500-Type Analog Station

2 TN2183 Analog Line Circuit Pack, Position 1C01

Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire: 8400-Series, 606A1	2-wire: 302D, 8400-Series, 603E	8510T BRI (with adjunct speaker phone)	Analog Station, Modem	NT1
1	TXT				
2	TXR			T	
3	PXT		TXT	R	
4		T	PXR		T
5		R	PXT	No Connection 4-pin modular jack	R
6	PXR		TXR		
7	-48VDC	(-48VDC)	(-48VDC)		-48VDC
8	GRD	GRD	GRD		GRD
Circuit Pack	TN754 4-wire digital (8 port)	TN2181 2-wire digital (16 port) TN2224 2-wire digital (24 port)	TN556 ISDN-BRI Line	TN2183 Analog line (16 port)	TN2198 2-wire Basic Rate Interface line

PX PBX transmitT Tip (A)
TX Terminal transmitRRing(B)

Analog Tie Trunk Example

This example shows how to connect analog tie trunk wiring from one Avaya™ S8700 Media Server for IP Connect Configurations to another one or any other Avaya configuration.

1. Set the option switches on the port circuit pack (such as TN760).
2. Refer to the Job Aid entitled *Option Switch Settings* PDF for detailed information.
3. Install cross-connect jumpers to connect the pins from the tie trunk circuit pack to the appropriate leads on the external tie trunk.
4. ''Analog Tie Trunk Wiring'' on page 192 shows a media gateway tie trunk connected to another media gateway tie trunk. Names of the tie trunk leads must be determined from the manufacturer or supplier of the external trunk circuit.
5. Administer on the Trunk Group screen on Avaya Site Administration. Refer to the *Administrator's Guide for Avaya MultiVantage Software* for more details.

Analog Tie Trunk Wiring

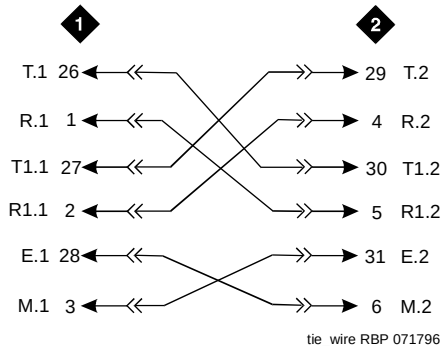


Figure notes

1 External Trunk or Adapter **2** Tie Trunk Circuit Pack (Position 1C05)

Digital Tie Trunk Example

This example shows how to connect digital tie trunk wiring from one media gateway to another one or any other Avaya configuration. ''Digital Tie Trunk Wiring'' on page 193 shows the connections.

1. Install cross-connect jumpers to connect the pins from the digital trunk circuit pack to appropriate pins on the manufacturer's or supplier's external digital trunk.
2. Set option switches on the port circuit pack (Digital Trunk).
3. Refer to the Job Aid entitled *Option Switch Settings* PDF for detailed information.
4. Administer on the DS1 and Trunk Group Screens of the management terminal. Refer to the *Administrator's Guide for Avaya MultiVantage Software* for more details.

Digital Tie Trunk Wiring

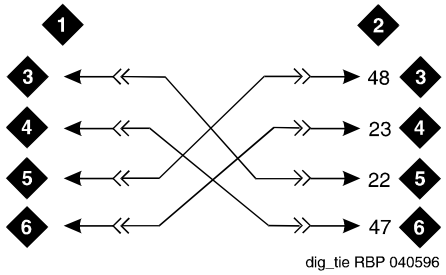


Figure notes

1	External Trunk	**4**	LO (Balanced Output Pair)
2	Digital Trunk Circuit Pack, Position 1C06	**5**	LI
3	LO	**6**	LI (Balanced Input Pair)

DS1 Tie Trunk Example

Digital Signal Level 1 (DS1) tie trunks provide a 1.544 Mbps (T1) or 2.048 Mbps (E1) digital data service between two collocated configurations or between the configuration and a data network.

See these examples:

- ‘‘Collocated DS1 Tie Trunks’’ on page 193
- ‘‘DS1 Tie Trunks Using T1 Channel Service Unit’’ on page 194

For cable descriptions, see

- ‘‘DS1 Cables’’ on page 195
- ‘‘Pinout of C6F Cable’’ on page 195

Collocated DS1 Tie Trunks

Two DS1 tie trunk circuit packs can be in collocated configurations. A DS1 Tie Trunk circuit pack in one configuration can be connected to a DS1 in another configuration. A C6D cable can be used if the distance is less than 50 feet (15.2 m). If the distance is between 50 feet (15.2 m) and 1310 feet (399 m), use a C6E cable.

NOTE:
The maximum distance between cabinets is 1310 feet (399.3 m).

DS1 Tie Trunks Using T1 Channel Service Unit

The T1 Channel Service Unit (CSU) interfaces the DS1 tie trunks with the 1.544 Mbps digital facility.

Connect the DS1 tie trunk to a T1 CSU. See “Typical Connections to Channel Service Unit’’ on page 194.

NOTE:
A 3150 CSU is shown, a 120A Integrated CSU (ICSU) may be used.

Contact your Avaya representative for maximum cabling distances for the 31xx series CSU or the 120A ICSU.

Typical Connections to Channel Service Unit

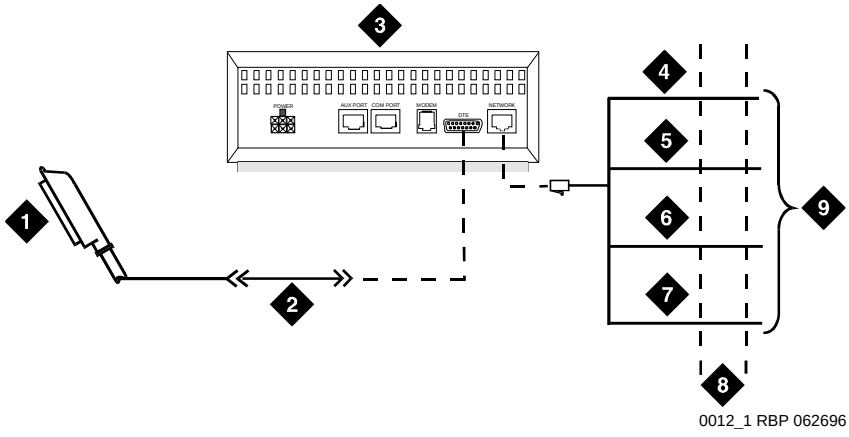


Figure notes

1. Connector to DS1 Interface Circuit Pack
2. C6C Cable (For Distances Over 50 Feet (15.24 m), Use C6E Cable(s))
3. T1 Channel Service Unit (CSU) 3150 Shown
4. T (Tip)
5. R (Ring)
6. T1 (Tip 1)
7. R1 (Ring 1)
8. 1.544 Mbps Digital Service Interface
9. To T1 Carrier

DS1 Cables

Connector Cable	Description and Usage
C6C connector cable	50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on one end and a 15-pin male connector on the other end. Use this cable to connect a DS1 tie trunk circuit pack to a Channel Service Unit (CSU).
C6D connector cable	50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on each end. Use this cable to connect a DS1 tie trunks in collocated cabinets.
C6E connector cable	100-foot (30.5 m) shielded cable equipped with a 50-pin male connector on one end and a 50-pin female connector on the other end. Use this cable as an “extension” cable between the DS1 tie trunk circuit pack and other connector cables.
C6F connector cable	50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on one end and a three inch (7.62 cm) stub on the other end. Use this cable to connect the DS1 tie trunk circuit pack to channel multiplexers requiring hardwired connections.

Pinout of C6F Cable

Wire Color	Lead Designation	Pin Number
White/Green	LI* (High Side)	47
Green	LI	22
White/Brown	LO	48
Brown	LO* (High Side)	23
White/Slate	LBACK2	49
Slate	LBACK1	24

Auxiliary Connector Outputs (MCC1 and SCC1 media gateways only)

Connect a 25-pair cable from the **AUX** connector on the back of the expansion control carrier to a connecting block on the trunk/auxiliary field.

‘‘Auxiliary Lead Appearances at AUX Connector’’ on page 197 shows the Control Carrier outputs cable pinouts. The Control Carrier **AUX** connector outputs include:

- Alarm monitoring for the auxiliary cabinet
- Seven -48 VDC power sources for emergency transfer units
- Three -48 VDC power sources for remotely powering three attendant consoles or telephone adjuncts
- The remote management terminal interface trunk connection location
- A relay contact that actuates a customer-supplied light, bell, or similar device. The relay can activate when a major, minor, or warning condition occurs. The device connected to the alarm leads must not exceed a rating of 30 VAC rms or 60 VDC at 0l75 amps.

  ‘‘Auxiliary Lead Appearances at AUX Connector’’ on page 197 shows the pinouts for an external alarm.

‘‘Port Circuit Pack and Telephone Pin Designations’’ on page 191 provides port circuit pack and telephone pin designations.

Auxiliary Lead Appearances at AUX Connector

Color[1]	Pinouts	Output	Power
W-BL BL-W	26 1	Major[2]	
W-O O-W	27 2	Minor*	
W-G G-W	28 3	GRD	
W-BR BR-W	29 4	GRD	
W-S S-W	30 5	GRD	
R-BL BL-R	31 6	GRD	
R-O O-R	32 7	GRD	
R-G G-R	33 8	Not Connected	
R-BR BR-R	34 9	Not Connected	
R-S S-R	35 10	Not Connected	
BK-BL BL-BK	36 11	-48 GND	Emergency Transfer Relay Power
BK-O O-BK	37 12	-48 GND	
BK-G G-BK	38 13	-48 GND	
BK-BR BR-BK	39 14	-48 GND	
BK-S S-BK	40 15	-48 GND	
Y-BL BL-Y	41 16	-48 GND	
Y-O O-Y	42 17	-48 GND	
Y-G G-Y	43 18	Not Connected	

Auxiliary Lead Appearances at AUX Connector — *Continued*

Color[1]	Pinouts	Output	Power
Y-BR BR-Y	44 19	GND -48	AUX Power
Y-S S-Y	45 20	GND -48	
V-BL BL-V	46 21	GND -48	
V-O O-V	47 22	Not Connected	
V-G G-V	48 23	Ext Alarm A** Ext Alarm Return	
V-BR BR-V	49 24	Not Connected	
V-S S-V	50 25	INADS Tip INADS Ring	

1. Color designation is the main wire color and the color of the stripe on the wire. The following wire colors apply:
   W White
   BL Blue
   O Orange
   G Green
   BR Brown
   S Slate (Grey)
   R Red
   BK Black
   Y Yellow
   V Violet
2. External alarm with signal incoming to media server.
   ** External alarm with signal outgoing from media server.

Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire: 8400-Series, 606A1	2-wire: 302D, 8400-Series, 603E	8510T BRI (with adjunct speaker phone)	Analog Station, Modem	NT1
1	TXT				
2	TXR			T	
3	PXT		TXT	R	
4		T	PXR		T

Port Circuit Pack and Telephone Pin Designations — *Continued*

Pin on Modular Plug	4-wire: 8400-Series, 606A1	2-wire: 302D, 8400-Series, 603E	8510T BRI (with adjunct speaker phone)	Analog Station, Modem	NT1
5		R	PXT	No Connection 4-pin modular jack	R
6	PXR		TXR		
7	-48VDC	(-48VDC)	(-48VDC)		-48VDC
8	GRD	GRD	GRD		GRD
Circuit Pack	TN754 4-wire digital (8 port)	TN2181 2-wire digital (16 port) TN2224 2-wire digital (24 port)	TN556 ISDN-BRI Line	TN2183 Analog line (16 port)	TN2198 2-wire Basic Rate Interface line

PX PBX transmitT Tip (A)
TX Terminal transmitRRing(B)

Three-Pair and Four-Pair Modularity

‘‘3-Pair and 4-Pair Modularity’’ on page 200 is from the port circuit pack to the voice or data terminal.

Most terminals connect to an information outlet (modular jack) installed at the work location. Make the connections from the port circuit pack to the modular jacks, as shown in ‘‘3-Pair and 4-Pair Modularity’’ on page 200. Then, plug the terminal into the modular jack.

‘‘Adjunct Power Connection Locations’’ on page 200 shows three methods of connecting adjunct power.

3-Pair and 4-Pair Modularity

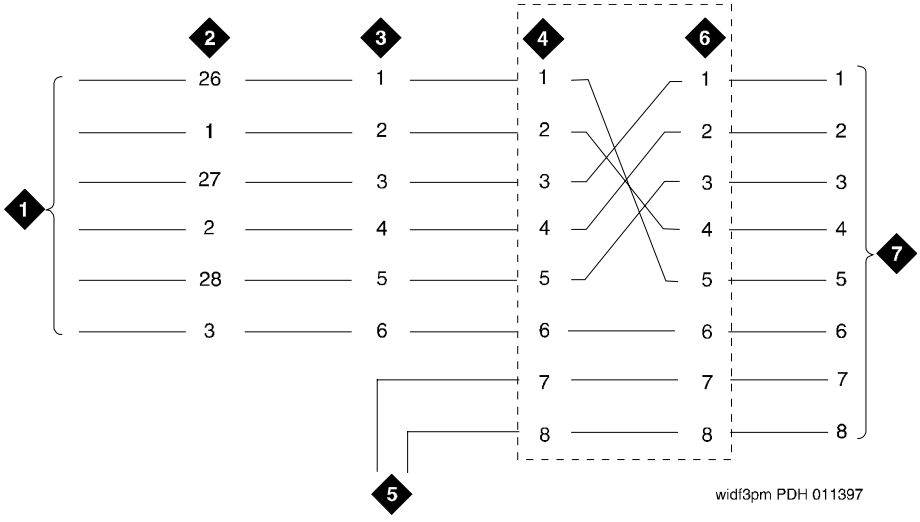


Figure notes

1 Port Circuit Pack

2 Media Gateway Connector Pins (3-Pair Modularity)

3 Main Distribution Frame (MDF) Pins (3-Pair Modularity)

4 Input to Information Outlet (4-Pair Modularity)

5 Adjunct Power

6 Output From Information Outlet (4-Pair Modularity)

7 Voice or Data Terminal Pins

Return to Task List

Adjunct Power Connection Locations

‘‘Example Adjunct Power Connections’’ on page 201 shows typical connection locations for adjunct power. Adjunct power for station equipment may be supplied from the equipment room, satellite location, or the work location.

For this figure, the following example is used:

1 If 25 telephones are connected to the media gateway and all 25 telephones need adjunct power, install a bulk power supply in the equipment room.

2 If only ten of the telephones need adjunct power, install a bulk power supply at the satellite location.

3 If only one telephone needs adjunct power, install the individual power supply at the work location.

Example Adjunct Power Connections

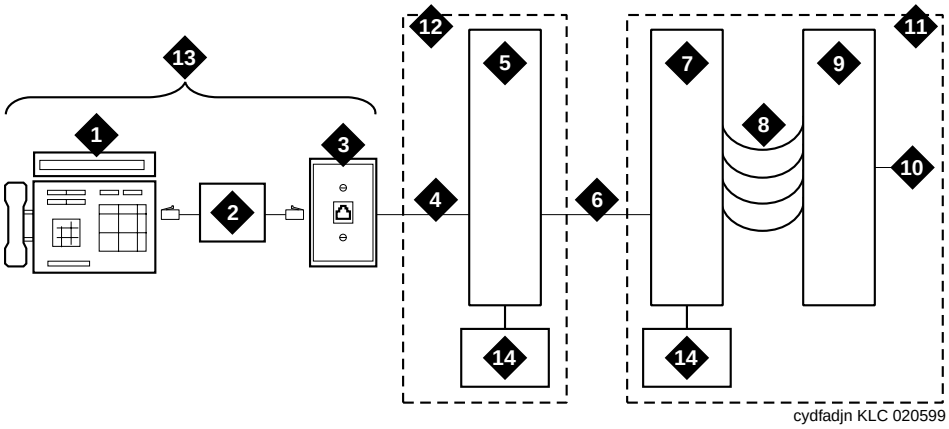


Figure notes

1	Typical Display Telephone	**8**	100P6A Patch Cord or Jumpers
2	Individual Power Supply (Such as 1151A1 or 1151A2)	**9**	Media Gateway Side of Main Distribution Frame (MDF)
3	Information Outlet (Modular Jack)	**10**	25-Pair Cable to Media Gateway (Analog Line Circuit Pack)
4	4-Pair D-Inside Wire (DIW) Cable	**11**	Equipment Room
5	Satellite Site or Adapter Location	**12**	Satellite Location
6	25-Pair D-Inside Wire (DIW) Cable	**13**	Work Location
7	Station Side of Main Distribution Frame (MDF)	**14**	Bulk Power Supply (Such as 1145B)

Attendant Console Example

Task List: Attendant Console Procedures

- ‘‘Install the Attendant Console’’ on page 203
- ‘‘Install the 26B1 Selector Console’’ on page 204

Attendant Console Cabling Distances, Local and Phantom Power

A console’s maximum distance from the media gateway is limited. The maximum distance for a 302D console is as shown in ‘‘Attendant Console Cabling Distances’’ on page 202.

Attendant Console Cabling Distances

Enhanced Attendant Console (302D)	24 AWG Wire (0.5106 mm^2)		26 AWG Wire (0.4049 mm^2)	
	Feet	Meters	Feet	Meters
With Selector Console				
Phantom powered	800	244	500	152
Locally powered	5000	1524	3400	1037
Without Selector Console				
Phantom powered	1400	427	900	274
Locally powered	5000	1524	3400	1037

Auxiliary Power

CAUTION:
Do not use the 329A power unit for the attendant console.

The nonessential functions of an attendant console and its optional 26A1 or 24A1 selector console derive their power from an auxiliary power source. Of the maximum of 27 attendant consoles, 3 of the consoles can derive auxiliary power from the media gateway and through the auxiliary cable located in the trunk/auxiliary field. Provide auxiliary power for a primary attendant console through this cable so the console remains fully operational during short power outages.

An attendant console can also derive auxiliary power from:

- Individual 1151A1 or 1151A2 power supply
- 258A-type adapters
- Bulk power supplies such as the 1145B2

A console’s maximum distance from its auxiliary power source is:

- 800 feet (244 m) for a 302A1
- 350 feet (106.8 m) for a 301B1 and 302D

Hard-Wire Bridging

Analog type hard-wire bridging is not allowed for any DCP endpoints. Hard-wire bridging provides no way of combining the digital output of two bridged DCP sets. Also, a bridged endpoint causes degradation of the DCP signal.

CAUTION:
Bridging or paralleling these endpoints can cause electrical damage to the consoles or cause the circuit pack to remove power from the consoles.

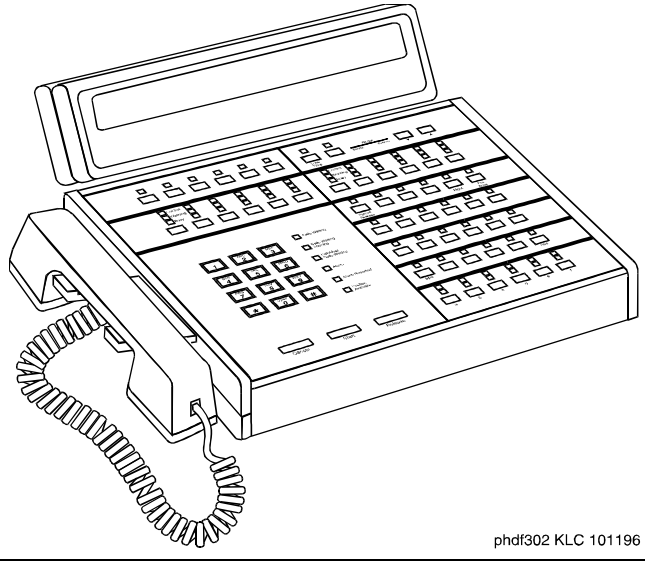
Dual Wiring of Two-Wire and Four-Wire Endpoints

Do not simultaneously wire a two-wire and four-wire endpoint to the same equipment location in an MDF. The Avaya configurations use separate circuit packs to interface two- and four-wire endpoints.

Install the Attendant Console

1. Install the Attendant Console and connect the modular cord to the information outlet.
2. Install labels per the Attendant Console form and the Display Module form assignments.
3. Install a Digital Line circuit pack in the assigned carrier slot (if an additional circuit pack is required).
4. Administer the forms listed in “Attendant Console” in *Administrator’s Guide for Avaya MultiVantage Software*.

302D Console



phdf302 KLC 101196

Install the 26B1 Selector Console

1. Connect the supplied 3-foot (0.9 m) D8AC cable to the modular jack on the bottom of the 26B1 Selector Console.
2. Route the cable to the attendant console and connect to the DXS/BLF jack.
3. Attach labels according to the Attendant Console form.
4. Administer the console using *Administrator's Guide for Avaya MultiVantage Software*.

Connect External Alarm Indicators and Auxiliary Power

Alarms can be generated on adjunct equipment, sent to the media server, and recorded and reported as "external alarms." A typical major alarm *input* is from an Uninterruptible Power Supply (UPS).

The media server provides a relay contact that can operate a customer-provided alarm, such as a light or bell. The circuitry and power source are customer-provided. The alarm device must not exceed a rating of more than 100 volts at 0.75 amp.

1. Connect 1 major and 1 minor alarm *input* pair to the trunk/auxiliary field from the AUX connector. See ''Alarm Inputs at AUX Connector'' on page 204.
2. Connect an external alarm *output* through pins 48 and 23 of the AUX connector. See ''Alarm Output at AUX Connector'' on page 204.
3. Note which device connects to which alarm and give this information to your Avaya representative for troubleshooting purposes.
4. Connect emergency transfer power and auxiliary power as shown in ''Emergency Transfer and Auxiliary Power'' on page 205. Auxiliary power includes power to an attendant console or adjunct device.

Alarm Inputs at AUX Connector

Color	AUX Connector
White-Blue	AP1 (Pin 26) Major Alarm Input
Blue-White	Ground (Pin 1)
White-Orange	AP2 (Pin 27) Minor Alarm Input
Orange-White	Ground (Pin 2)

Alarm Output at AUX Connector

Color	AUX Connector
Violet-Green	EXTALMA (Pin 48) Alarm Output
Green-Violet	EXTALMB (Pin 23) (Ground) Alarm Output

Emergency Transfer and Auxiliary Power

Color	AUX Connector
Black-Green	XFER48 (Emergency Transfer) (Pin 36)
Green-Black	Ground (Pin 11)
Black-Slate	ACC48A (Adjunct -48 VDC) (Pin 19)
Slate-Black	Ground (Pin 44)

Connect Power Distribution Unit External Alarm Wires

The external alarm plug should already be connected to the J58890CH-1 Power Distribution Unit. The pinout for the connector is shown in ‘‘External Alarm Connector Pinout’’ on page 206.

NOTE:
RS-232 alarms (RXD, DTR, DSR, TXD, RS-232 GRD, and RTS) are not supported on the BU3200A Battery Interface Unit.

1. Choose an alarm to connect (such as Battery Interface Failure).
2. Choose the port circuit pack to use and its carrier and slot number (from ‘‘Port Circuit Pack and Telephone Pin Designations’’ on page 191). For example TN2183 Analog Line, Cabinet 1, Carrier C, Slot 1.
3. Choose a port circuit on the port circuit pack, for example Port 3.
4. Install cross-connect jumpers to connect the named pins from the alarm wires to the appropriate pins on the port circuit pack.

NOTE:
It is recommended that the RFA, ACF, and BIF alarm leads be connected to the major alarm device and the BOD alarm leads be connected to the minor alarm device.

5. Connect the major and minor alarm devices to the appropriate cross-connect pins on the MDF.
6. Administer the alarms using the *Administrator’s Guide for Avaya MultiVantage Software*.

External Alarm Connector Pinout

Pin	Designation	Definition
26	Not Used	
1	Not Used	
27	Not Used	
2	Not Used	
28	Not Used	
3	Not Used	
29	Not Used	
4	Not Used	
30	Not Used	
5	Not Used	
31	Not Used	
6	Not Used	
32	Not Used	
7	Not Used	
33	RFA2 +	Rectifier Failure (positive)
8	RFA2 -	Rectifier Failure (negative)
34	ACF2 +	AC Failure (positive)
9	ACF2 -	AC Failure (negative)
35	BIF2 +	Battery Interface Failure (positive)
10	BIF2 -	Battery Interface Failure (negative)
36	BOD2 +	Battery On Discharge (positive)
11	BOD2 -	Battery On Discharge (negative)
37	Not Used	
12	RXD	Receive Data
38	TXD	Transmit Data
13	DTR	Data Terminal Ready
39	RS-232 GRD	RS-232 Ground
14	DSR	Data Set Ready
40	RTS	Request To Send
15	Not Used	

External Alarm Connector Pinout — *Continued*

Pin	Designation	Definition
41	Not Used	
16	Not Used	
42	Not Used	
17	Not Used	
43	Not Used	
18	Not Used	
44	Not Used	
19	Not Used	
45	Not Used	
20	Not Used	
46	Not Used	
21	Not Used	
47	Not Used	
22	Not Used	
48	Not Used	
23	Not Used	
49	Not Used	
24	Not Used	
50	Not Used	
25	Not Used	

Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire: 8400-Series, 606A1	2-wire: 302D, 8400-Series, 603E	8510T BRI (with adjunct speaker phone)	Analog Station, Modem	NT1
1	TXT				
2	TXR			T	
3	PXT		TXT	R	
4		T	PXR		T

Port Circuit Pack and Telephone Pin Designations — *Continued*

Pin on Modular Plug	4-wire: 8400-Series, 606A1	2-wire: 302D, 8400-Series, 603E	8510T BRI (with adjunct speaker phone)	Analog Station, Modem	NT1
5		R	PXT	No Connection 4-pin modular jack	R
6	PXR		TXR		
7	-48VDC	(-48VDC)	(-48VDC)		-48VDC
8	GRD	GRD	GRD		GRD
Circuit Pack	TN754 4-wire digital (8 port)	TN2181 2-wire digital (16 port) TN2224 2-wire digital (24 port)	TN556 ISDN-BRI Line	TN2183 Analog line (16 port)	TN2198 2-wire Basic Rate Interface line

PX PBX transmitT Tip (A)
TX Terminal transmitRRing(B)

Remote Access

For information on connecting a modem to the Avaya S8700 Media Server, refer to the *Getting Started with the Avaya™ S8700 Media Server for IP Connect Configurations*. PDF

Install Off-Premises Station Wiring

The local telephone company provides cabling outside the building for off-premises stations. The off-premises stations can appear on any of the RJ21X network interfaces provided for the Central Office (CO) trunks.

CAUTION:
Only an FCC-approved (or equivalent) analog type telephone (such as a 2500-type), can be used as an off-premises station. The TN746B and TN2183 Analog Line circuit packs can be connected to off-premises stations.

1. Install an A25D (male to male) cable between the RJ21X network interface and a sneak fuse panel.
2. At the Main Distribution Frame (MDF), connect jumper wires between one row/connecting block in the green field and up to three rows/connecting blocks in the purple field to concentrate the analog line pairs.
3. Connect an A25D cable between the sneak fuse panel and the terminal block connector associated with the green row in the previous step.
4. Install a green label on the terminal block to identify the remote location.
5. Administer per the *Administrator's Guide for Avaya MultiVantage Software*.

Off-Premises or Out-of-Building Stations

Out-of-building campus stations are telephones not physically located in the same building as the equipment room but located on the same property. Only analog telephones connected to TN742, TN746B, TN2183, or TN769 Analog Line circuit packs can be installed out-of-building.

Off-Premises Connections

''Connections for 1 to 8 Out-of-Building Analog Telephones'' on page 210 shows the connections for 1 to 8 off-premises analog telephones.

''Connections to 24 Out-of-Building Telephones'' on page 211 shows the connections for up to 24 off-premises analog telephones. Concentrations of analog line pairs are used at both buildings to minimize the off-premises wiring required. At the MDF, jumpers must be connected between 1 row/connecting block in the white field and up to 3 rows/connecting blocks in the purple field. At the station location, a WP-90929, List 1 Concentrator Cable is used. There are 8 station appearances on each of the 3 fingers of the concentrator cable.

The maximum distance from the media gateway to the out-of-building telephone is 6000 feet (1828.8 meters) using 24 AWG (#5) (0.5 mm^2) wire.

The maximum range of out-of-building analog telephones (500-, 2500-, or 7100-types) connected to an analog line circuit pack should be such that the maximum loop resistance does not exceed 1300 ohms.

Connections for 1 to 8 Out-of-Building Analog Telephones

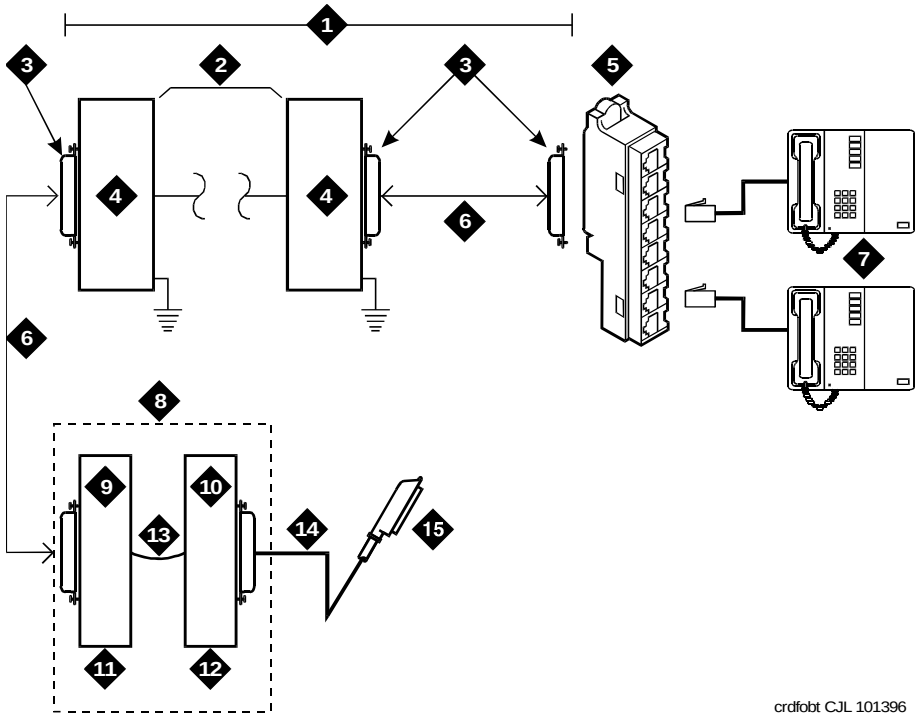


Figure notes

1 Locally Engineered Cables and Equipment

2 Out-of-Building Wiring

3 25-Pair Connector

4 Multi-Pair Protector Units (Primary Protectors with Heat Coils or Equivalent with Sneak Current Protection)

5 356A Adapter

6 B25A Cable (Male to Female)

7 Out-Of-Building Analog Telephones

8 Part of Main Distribution Frame (MDF)

9 Station Side

10 Media Gateway Side

11 White Field

12 Purple Field

13 Cross-Connect Jumpers

14 Tip and Ring Wires

15 To Analog Line Circuit Pack

Connections to 24 Out-of-Building Telephones

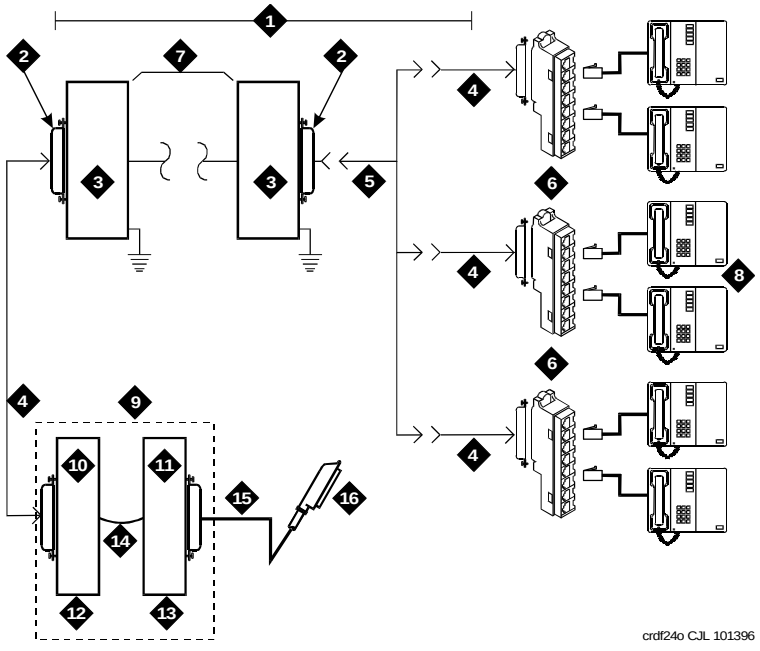


Figure notes

1 Locally Engineered Cables and Equipment

2 25-Pair Connector

3 Multi-Pair Protector Units (Primary Protectors with Heat Coils or Equivalent with Sneak Current Protection)

4 B25A Cable (Male to Female)

5 Concentrator Cable (WP90929 List 1)

6 356A Adapter

7 Out-of-Building Wiring

8 Out-Of-Building Analog Telephones

9 Part of Main Distribution Frame (MDF)

10 Station Side

11 Media Gateway Side

12 White Field

13 Purple Field

14 Cross-Connect Jumpers

15 Tip and Ring Wires

Off-Premises Protection Requirements

Both building entrances require carbon block or equivalent protection and sneak current protection. Protection can be provided by:

- a 4-type protector, which is equipped with a heat coil
- a 3-type protector plus a separate sneak current protector

The 4-type protector is the preferred device. For installations not using primary protection, 4-type protectors should always be used. When the 3-type protector is already installed, a separate sneak current protector is required.

The multi-pair protector units and the off-premises cabling must be locally engineered. Connected multi-pair protector units (female 25-pair connector) are recommended. ‘‘Analog Line Circuit Protectors’’ on page 212 shows the recommended protectors.

The protectors can be ordered from the *Premises Distribution Systems Equipment and Supplies Catalog*.

Analog Line Circuit Protectors

Primary[1]	Primary (with heat coil)	Sneak Current Protectors[1]
3B1A (carbon)	4B1C (carbon)	220029 Fuse
3B1E-W (wide gap gas tube)	4B1E-W (wide gap gas tube)	SCP-1
3C1S (solid state)	4C1S (solid state)	

1. The 3-type protectors should be used only if they are already part of the existing protection system. A sneak current protector is always required when a 3-type primary protector is used.

Telephone Restrictions for Exposed Environments

Analog telephones connected to TN746 Analog Line circuit packs cannot be installed in an exposed environment

Digital Out-of-Building Telephone Protection

Digital out-of-building telephones require protection at both building entrances. The 4C3S-75 Enhanced Protector and the ITW Linx Enhanced Protector can be used to protect digital telephones and digital line circuit packs. These units provide primary and sneak current protection. The 4C3S-75 is equipped with a heat coil for sneak current protection, and the ITW Linx is equipped with replaceable fuses for sneak current protection.

NOTE:
The TN2181 16 Port Two-Wire Digital Line circuit pack may not be approved for some out-of-building uses. Contact your Avaya representative for more information.

The 4C3S-75 may be used only with Vintage 14 or newer TN754 circuit packs or TN754B circuit packs. ‘‘Digital Voice Circuit Protectors’’ on page 213 lists the approved protectors.

When possible, all new and reused wiring installations should use blocks that accept the standard 5-pin plug-in 4C3S-75 protector. However, there are reused wiring installations where this may not be cost effective. For these installations, the ITW Linx protector may be installed.

An example of this is where screw-type carbon block protectors — or other non plug-compatible types — are in place and it is too costly to re-terminate the outside plant cable on a 5-pin mounting block for only a few out-of-building terminals.

Installing the ITW Linx Enhanced Protector

The ITW Linx Enhanced Protector can be installed in series with existing primary protection. The ITW Linx Enhanced Protector mounts directly on connecting blocks and requires a separate ground bar.

Installing the 4C3S-75 Enhanced Protector

The 4C3S-75 protector cannot be installed in series with other types of primary protection. It must be installed as the only protection on the line entering the building. For the 4C3S-75 protector there are a variety of 25-, 50-, and 100-pair protector panels equipped with 110-type connecting blocks and/or RJ21X connectors.

Installing the Data Link Protector

The maximum range for out-of-building digital telephones is 3400 feet when using 24 AWG (#5) (0.5 mm^2) wire and 2200 feet (670 m) when using 26 AWG (#4) (0.4 mm^2) wire. The range can be extended to 5000 feet (1524 m) using 24 AWG (#5) (0.5 mm^2) wire or 4000 feet (1220 m) using 26 AWG (#4) (0.4 mm^2) wire with the use of a data link protector. The protector is an isolating transformer used to remove phantom power on the media gateway side and re-introduce it on the terminal side.

When a protector is used, the telephone must be locally powered by an external power supply or through the AC power cord provided with some telephones. The protector is installed on the equipment side of the protection in both buildings.

Refer to ‘‘Example Adjunct Power Connections’’ on page 201 and ‘‘Connections at Trunk/Auxiliary Field’’ on page 214.

Digital Voice Circuit Protectors

Circuit Pack	Enhanced Primary Protector (With Sneak Current Protection)
TN754 V13 or earlier	ITW Linx Only
TN754 V14 or later	4C3S-75 or ITW Linx
TN754B all vintages	4C3S-75 or ITW Linx
TN2181 all vintages	4C3S-75 or ITW Linx
TN2224 all vintages	4C3S-75 or ITW Linx

Connections at Trunk/Auxiliary Field

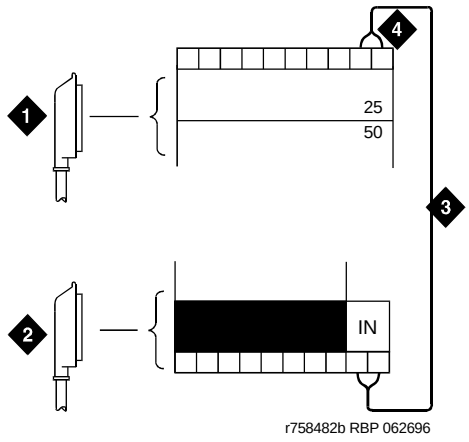


Figure notes

1	To Network Interface Facility	**3**	One Pair of Wires
2	To Control Carrier Auxiliary Connector	**4**	Twenty-fifth Pair of RJ21X Network Interface Jack

Emergency Transfer Units and Associated Telephones

An 808A Emergency Transfer Panel mounted next to the trunk/auxiliary field provides emergency transfer capability. You can use 500- and 2500-series analog telephones either for emergency transfer or as normal extensions. For emergency transfer, connect the phones directly to the 808A; for normal extensions, wire them through the 808A. Analog Central Office (CO) and Wide Area Telecommunications Service (WATS) trunks can provide emergency transfer capability.

The 808A Emergency Transfer Panel provides emergency trunk bypass or power-fail transfer for up to five incoming Central Office (CO) trunk loops to five selected station sets. The 808A equipment's Ringer Equivalency Number (REN) is 1.0A.

At the Main Distribution Frame (MDF), the unit is controlled by a connection to a yellow terminal row/connecting block in the trunk/auxiliary field. The unit is controlled by -48 VDC from the EM TRANS RELAY PWR terminals. There are seven EM TRANS RELAY PWR terminal pairs that allow powering of up to seven transfer units.

Should power be restored to the relays while a call connected through the 808A is in progress, the 808A maintains the connection until the user goes on-hook. Each 808A can handle up to five Central Office (CO) trunks.

808A Emergency Transfer Panel and Telephone Installation Examples

‘‘808A Emergency Transfer Panel’’ on page 216 shows a typical 808A Emergency Transfer Panel. The 808A connects to the Main Distribution Frame (MDF) with B25A or A25B cable.

The panel can be installed on any mounting frame in either a vertical or horizontal position. The housing has ears for screw-mounting and cutouts for snap- mounting the unit in an 89-type mounting bracket. See ‘‘808A Emergency Transfer Panel Mounting’’ on page 217.

Task List: Typical Emergency Transfer Panel and Telephone Installation:

- ‘‘Install the 808A Emergency Transfer panel’’ on page 217
- ‘‘Install Telephones Used Only for Emergency Transfer (Trunk/Auxiliary Field)’’ on page 222
- ‘‘Install Telephones Used for Emergency Transfer and as Normal Extension (Trunk/Auxiliary Field)’’ on page 223

808A Emergency Transfer Panel

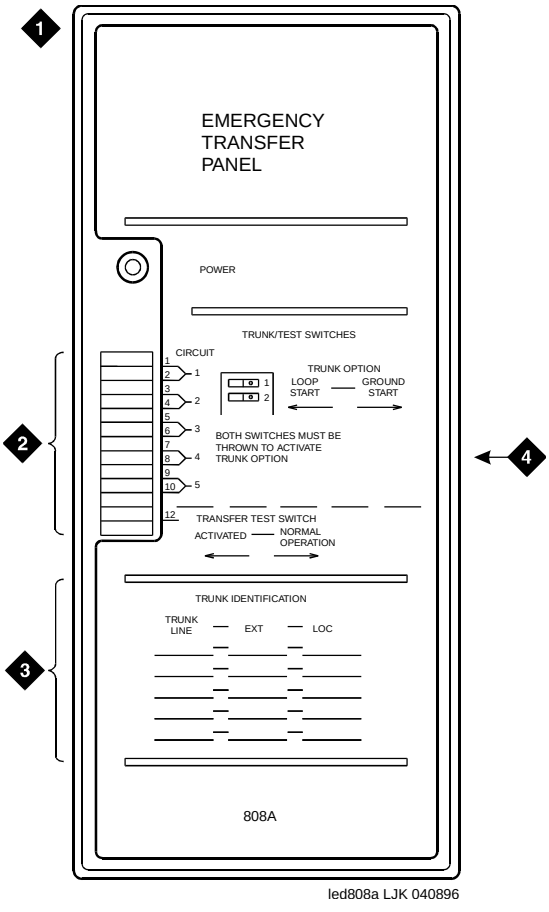


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Figure notes

1	808A Emergency Transfer Panel	**3**	Trunk Identification Label
2	Circuit Start Selection Switches	**4**	25-Pair Male Connector

808A Emergency Transfer Panel Mounting

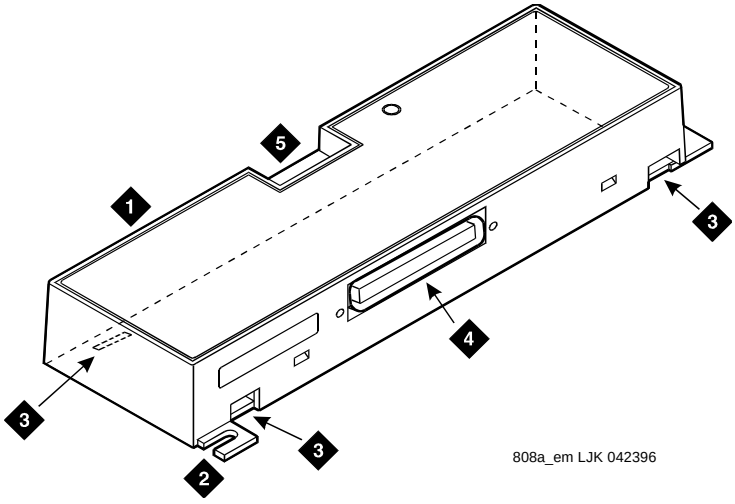


Figure notes

1	808A Emergency Transfer Panel	**4**	25-Pair Male Connector
2	Ear for Screw Mount	**5**	Circuit Start Switches
3	Cut-Out for Snap Mount		

Install the 808A Emergency Transfer panel

NOTE:
The 808A must be installed in a location that can be accessed only by authorized personnel. The location must meet standard environmental considerations such as temperature, humidity, and so forth.

1. Verify dial tone is present at each trunk circuit.
2. Locate the circuit start selection switches (see ‘‘808A Emergency Transfer Panel’’ on page 216).

   These are the first 10 two-position switches on the left side of the Emergency Transfer Panel. They are used to set each of the five incoming trunk lines to either loop start or ground start. Two switches are used for each circuit; switches 1 and 2 are used for circuit 1, switches 3 and 4 are used for circuit 2, and so forth. See ‘‘Trunk/Test Switches’’ on page 218.
3. For loop start, set the switches to the left. For ground start, set the switches to the right.
4. Connect a 25-pair cable between the male RJ21 25-pair connector on the Emergency Transfer Panel and the yellow field of the Main Distribution Frame (MDF). ‘‘Pin Assignments for 25-Pair Connector’’ on page 219 shows the pinouts.

5 Make cross-connections for each emergency trunk/emergency station pair.

The 808A is connected to the Main Distribution Frame (MDF) by means of a B25A cable. ‘‘Connections for Telephone Used for Emergency Transfer’’ on page 221 shows the connections at the trunk/auxiliary field for a telephone used only for emergency transfer.

‘‘Connections for Telephone Used for Emergency Transfer and as Normal Extension’’ on page 222 shows the connections at the trunk/auxiliary field for a telephone used for emergency transfer as well as a normal extension.

6 On the trunk identification label at the bottom of the panel, record the trunk line, extension, and location for each circuit.

7 To each telephone designated as an emergency terminal, attach a label identifying it as such. The labels are provided with the unit.

8 Check for normal operation as follows:

- Place the test switch (switch 12) in NORMAL OPERATION.
- Ensure the power supply is providing -48 VDC at 80 mA maximum. The power LED should be ON.
- Check wiring connections.
- Verify there is dial tone on all emergency transfer sets.

If all of the above conditions are not met, remove the panel from service and replace it with a new panel.

9 Check for transfer operation as follows:

- Place the test switch (switch 12) in the ACTIVATED position.
- The power LED should be OFF.
- Verify there is dial tone on all emergency transfer sets.

If all of the above conditions are not met, remove the panel from service and replace it with a new panel.

Trunk/Test Switches

Switch Number	Circuit Number
1	1
2	1
3	2
4	2
5	3
6	3
7	4
8	4

Trunk/Test Switches — *Continued*

Switch Number	Circuit Number
9	5
10	5
11	Not Used
12	Test Switch

Pin Assignments for 25-Pair Connector

26	W-BL	TTC1	Tip-PBX Trunk Circuit 1
1	BL-W	RTC1	Ring-PBX Trunk Circuit 1
27	W-O	TTK1	Tip-CO Trunk Circuit 1
2	O-W	RTK1	Ring-CO Trunk Circuit 1
28	W-G	TLC1	Tip-PBX Line Port 1
3	G-W	RLC1	Ring-PBX Line Port 1
29	W-BR	TST1	Tip-Emergency Terminal 1
4	BR-W	RST1	Ring-Emergency Terminal 1
30	W-S	TTC2	Tip-PBX Trunk Circuit 2
5	S-W	RTC2	Ring-PBX Trunk Circuit 2
31	R-BL	TTK2	Tip-CO Trunk Circuit 2
6	BL-R	RTK2	Ring-CO Trunk Circuit 2
32	R-O	TLC2	Tip-PBX Line Port 2
7	O-R	RLC2	Ring-PBX Line Port 2
33	R-G	TST2	Tip-Emergency Terminal 2
8	G-R	RST2	Ring-Emergency Terminal 2
34	R-BR	TTC3	Tip-PBX Trunk Circuit 3
9	BR-R	RTC3	Ring-PBX Trunk Circuit 3
35	R-S	TTK3	Tip-CO Trunk Circuit 3
10	S-R	RTK3	Ring-CO Line Port 3
36	BK-BL	TLC3	Tip-PBX Line Port 3
11	BL-BK	RLC3	Ring-PBX Line Port 3
37	BK-O	TST3	Tip-Emergency Terminal 3
12	O-BK	RST3	Ring-Emergency Terminal 3
38	BK-G	TTC4	Tip-PBX Trunk Circuit 4

Pin Assignments for 25-Pair Connector — *Continued*

13	G-BK	RTC4	Ring-PBX Trunk Circuit 4
39	BK-BR	TTK4	Tip-CO Trunk Circuit 4
14	BR-BK	RTK4	Ring-CO Trunk Circuit 4
40	BK-S	TLC4	Tip-PBX Line Port 4
15	S-BK	RLC4	Ring-PBX Line Port 4
41	Y-BL	TST4	Tip-Emergency Terminal 4
16	BL-Y	RST4	Ring-Emergency Terminal 4
42	Y-O	TTC5	Tip-PBX Trunk Circuit 5
17	O-Y	RTC5	Ring-PBX Trunk Circuit 5
43	Y-G	TTK5	Tip-CO Trunk Circuit 5
18	G-Y	RTK5	Ring-CO Trunk Circuit 5
44	Y-BR	TLC5	Tip-PBX Line Port 5
19	BR-Y	RLC5	Ring-PBX Line Port 5
45	Y-S	TST5	Tip-Emergency Terminal 5
20	S-Y	RST5	Ring-Emergency Terminal 5
46	V-BL	COM1	Common 1 Relay Contact
21	BL-V	NO1	Normally Open 1 Contact
47	V-O	NC2	Normally Closed 2 Contact
22	O-V	NC1	Normally Closed 1 Contact
48	V-G	COM2	Common 2 Relay Contact
23	G-V	NO2	Normally Open 2 Contact
49	V-BR		
24	BR-V		
50	V-S	GRD	Ground from Aux Cable
25	S-V	-48PX	-48V from AUX Cable

Connections for Telephone Used for Emergency Transfer

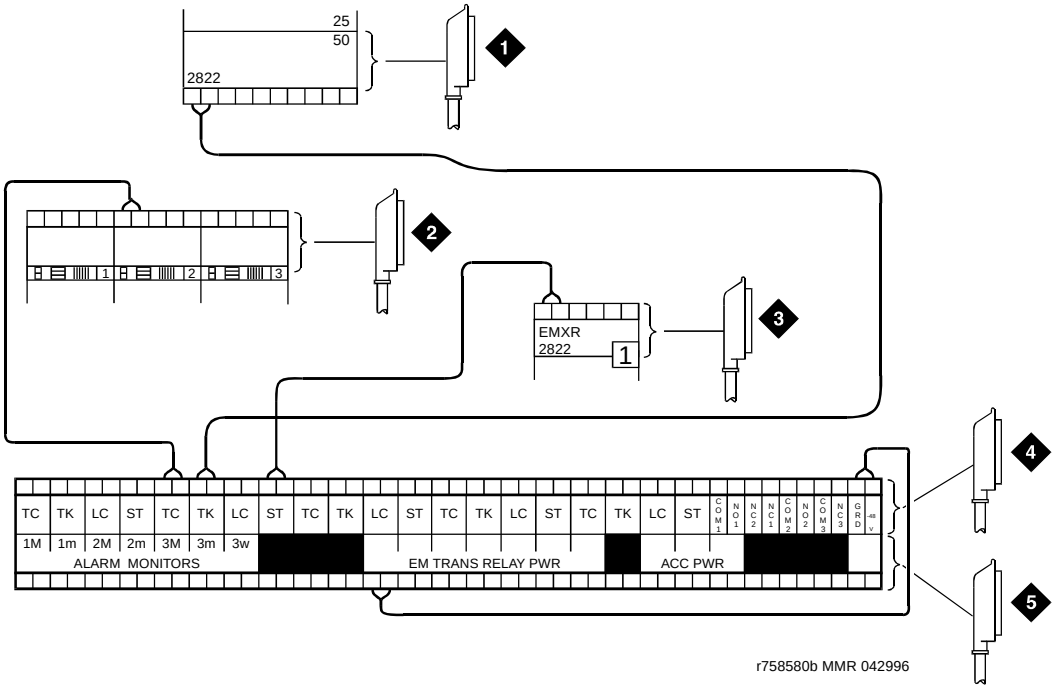


Figure notes

1 To Network Interface Circuitry

2 To TN747 (or Equivalent) Central Office Trunk Circuit Pack

3 To Blue or White Station Distribution Field

4 To Power Transfer Unit

5 To Control Carrier Auxiliary Connector

Connections for Telephone Used for Emergency Transfer and as Normal Extension

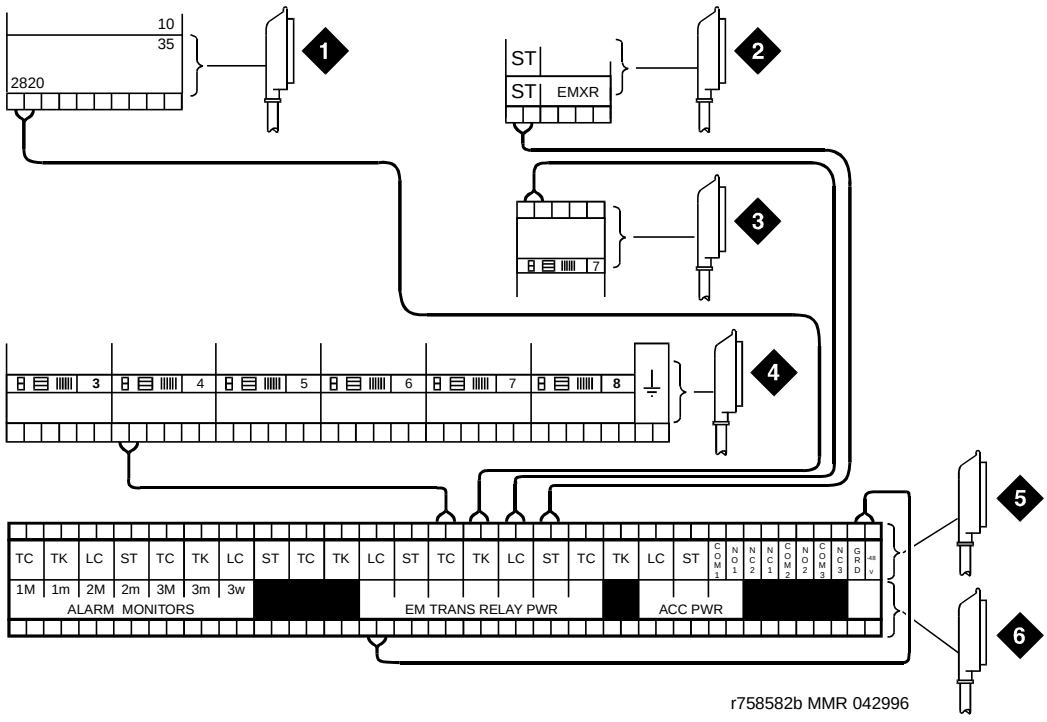


Figure notes

1. To Network Interface Facility
2. To Blue or White Station Distribution Field
3. To TN2183 or Equivalent Analog Line Circuit Pack
4. To TN747 (or Equivalent) Central Office Trunk Circuit Pack
5. To Power Transfer Unit
6. To Control Carrier Auxiliary Connector

Install Telephones Used Only for Emergency Transfer (Trunk/Auxiliary Field)

1. Connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block and the **EM TRANS RELAY PWR** terminal. See ‘‘Connections for Telephone Used for Emergency Transfer’’ on page 221.
2. Connect Central Office (CO) trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.

4 Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the assigned terminal in the blue or white station distribution field. The **ST** terminal leads should be terminated on the following pairs: 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

5 Install the telephone:

- Connect telephone to the information outlet.
- Install patch cords/jumper wires between the media gateway side and the station side of the station distribution field on the MDF.

Install Telephones Used for Emergency Transfer and as Normal Extension (Trunk/Auxiliary Field)

1 Connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block to the **EM TRANS RELAY PWR** terminal. See ‘‘Connections for Telephone Used for Emergency Transfer and as Normal Extension’’ on page 222.

2 Connect CO trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.

3 Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.

4 Connect telephone leads from the purple analog line circuit pack row/ connecting block to the **LC** terminals on the yellow emergency transfer row/connecting block for each telephone.

5 Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the assigned terminal in the blue or white station distribution field.

6 Install the telephone:

- Connect telephone to the information outlet.
- Install patch cords/jumper wires between the media gateway side and the station

Install External Ringing

Connections for external ringing are at an information outlet. The media gateway side of the Main Distribution Frame (MDF) is connected to a TN2183 (or equivalent) Analog Line circuit pack. The circuitry and power source for the device are customer-provided.

NOTE:
A maximum of 3 devices can connect to 1 analog line circuit pack port.

1. Wire the ringing device to the information outlet as shown in "3-Pair and 4-Pair Modularity" on page 224 and "Example Adjunct Power Connections" on page 201.
2. Administer per the *Administrator's Guide for Avaya MultiVantage Software*.

3-Pair and 4-Pair Modularity

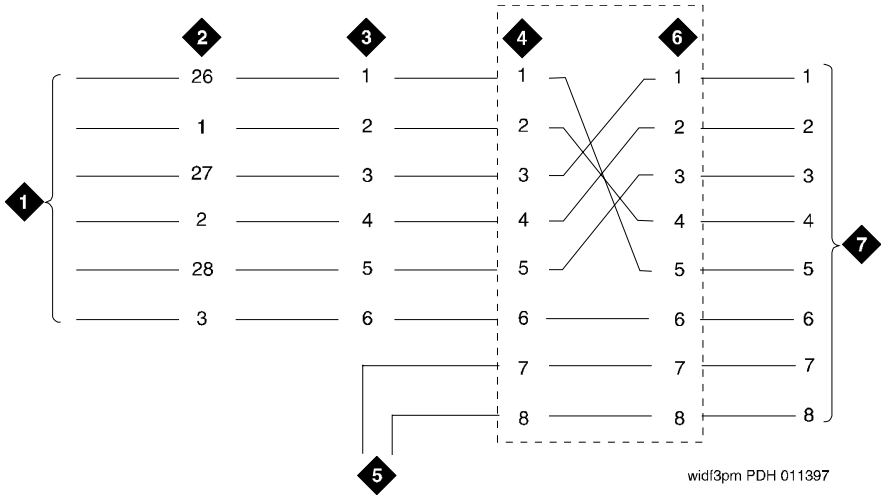


Figure notes

1. Port Circuit Pack
2. Media Gateway Connector Pins (3-Pair Modularity)
3. Main Distribution Frame (MDF) Pins (3-Pair Modularity)
4. Input to Information Outlet (4-Pair Modularity)
5. Adjunct Power
6. Output From Information Outlet (4-Pair Modularity)
7. Voice or Data Terminal Pins

Install the Queue Warning Indicator

The connections for the queue warning indicator are the same as external ringing. An AC indicator (lamp) such as a 21C49 can be used in a Uniform Call Distribution/Direct Departmental Calling (UCD/DDC) queue.

The lamp is connected to an information outlet. The media gateway side of the MDF is connected to an analog line circuit pack located in a port carrier.

1 Wire the queue warning indicator to the information outlet as shown in ‘‘3-Pair and 4-Pair Modularity’’ on page 224 and ‘‘Example Adjunct Power Connections’’ on page 201.

Installing and Wiring Telephone Power Supplies

These links provide information and wiring examples of installation procedures for the 1145B22 and 1151A1 / 1151A2 power supplies. These are examples only and actual wiring procedures may vary at each site.

NOTE:
Refer to the *Installation and Adjuncts and Peripherals for Avaya MultiVantage™ DEFINITY Server* to install the necessary peripheral equipment.

Power supplies include

- ‘‘1145B22 Power Supply’’ on page 226
- ‘‘1151A1 and 1151A2 Power Supplies’’ on page 236
- ‘‘P333T-PWR Power over Ethernet Stackable Switch’’ on page 238

1145B22 Power Supply

The 1145B22 closet power arrangement provides an uninterruptible -48 VDC power source with battery and 1146B2 distribution unit for ISDN/DCP, terminal equipment, adjuncts, and other customer-supplied equipment. During AC power interruptions, batteries automatically provide power to the load.

NOTE:
Before you begin, read this ‘‘Important Warning for 1145B2 Power Supply’’ on page 227.

Perform these tasks in order:

1. ‘‘Install the Wall-Mounting Plates’’ on page 231
2. ‘‘Mount the 1146B2 Power Distribution Unit’’ on page 231
3. ‘‘Install the Battery Mounting/Wiring’’ on page 232
4. ‘‘Install the Expanded Power Distribution Unit’’ on page 232
5. ‘‘Power Up and Test the Power Supply’’ on page 233
6. ‘‘Wire the 1146B2 Power Distribution Unit’’ on page 234
7. ‘‘Reset LEDs on Power Distribution Unit’’ on page 236

Important Warning for 1145B2 Power Supply

WARNING:
Important Safety Instructions follow.

When operating this equipment, basic safety precautions must be followed to reduce the risk of fire, electric shock and personal injury, including the following:

- Read and understand all instructions.
- Do not attach the power supply cord to building surfaces.
- For continued back-up protection and battery reliability, replace batteries every four years.
- Follow all warnings and instructions marked on the products.
- Clean products only with a dry rag.
- Do not use this product near water.
- For mounting security, follow all installation instructions when mounting product.
- Openings on top and bottom of power unit are provided for ventilation. Do not block or cover these openings. Do not exceed recommended environmental temperatures.
- Operate these products only from the type of power source indicated on the product labels.
- The power unit is equipped with a three wire grounding type plug; a plug having a third (grounding) pin. This plug will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the grounding type plug.
- Do not allow anything to rest on or spill into the products.
- To reduce risk of fire and electrical shock, do not overload power outlets.
- Never push objects of any kind through the power supply or distribution unit slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
- To reduce risk of electric shock, do not disassemble these products. Return them for repair when needed. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the products are subsequently used.
- Power down the power unit (see label on power unit on how to do this) and refer servicing under the following conditions:
    - If liquid has been spilled into any of the products
    - If any of the products have been exposed to water
    - If any of the products do not operate normally
    - If any of the products have been dropped or damaged
    - If any of the products exhibits a change in performance

- Do not attempt to recharge batteries on your own. The batteries may leak corrosive electrolyte or explode. The 1145B2 power unit recharges the batteries safely.
- Remove the batteries if the power unit will not be used for a long period of time (several months or more) since during this time the battery may leak.
- Discard discharged batteries as soon as possible. Discharged batteries are more likely to leak.
- Do not store batteries in high temperature areas. Batteries stored in a cold environment should be protected from condensation during storage and warming. Batteries should be stabilized at room temperature prior to use after cold storage. Do not install batteries if the manufacturing date on the label indicates that the batteries are more than six months old.

Mounting the 1145B2/1146B2 Power Supply

‘‘1145B2/1146B2 Mounting Arrangement’’ on page 229 shows how the standard power supply and wall-mounting plates fit together. ‘‘Expanded Power Distribution Unit’’ on page 230 shows the expanded power supply components (power distribution unit and “T” cable).

A manual switch on the distribution unit allows the user to redirect reserve power to outputs 1 through 32 so all outputs are provided battery reserve power, or to outputs 1 through 8 to provide high power above 6.25 watts.

NOTE:
The switch must be set to the 1-32 position.

The 1145B22/1146B2 is a -48V power supply with 275 watts total output. Each output circuit is current limited by a Polymer Positive Temperature Coefficient Resistance Device (PTC) that limits the maximum output to 12 watts. Each 1146B2 output has an LED to indicate the status of the PTC. If the LED is on, the PTC has a short on that power pair.

Not all outputs can simultaneously provide 12 watts. The average power per output cannot exceed 8.6 watts (275/32 = 8.6). The 1145B22 is designed to power one ISDN terminal or DCP adjunct per output. The maximum number of terminals or adjuncts is 32 at less than or equal to 6.25 watts each. The 1145B22 is required for installations outside the United States.

Auxiliary power (local or bulk) is always required for the following:

- Attendant Console 302C1
- Any 8520 terminal
- Any 7500- or 8500-series terminal with an asynchronous data module
- Any 7500-series terminal whether in passive bus, or point to point (one per BRI port)
- Any 8510 terminal in passive bus or with an asynchronous data module (unless the 8510 will not be used to support data or video)
- PassageWay adapter interface
- Some 8400-series terminal and adjuncts
- Some 7400-series terminal and adjuncts

1145B2/1146B2 Mounting Arrangement

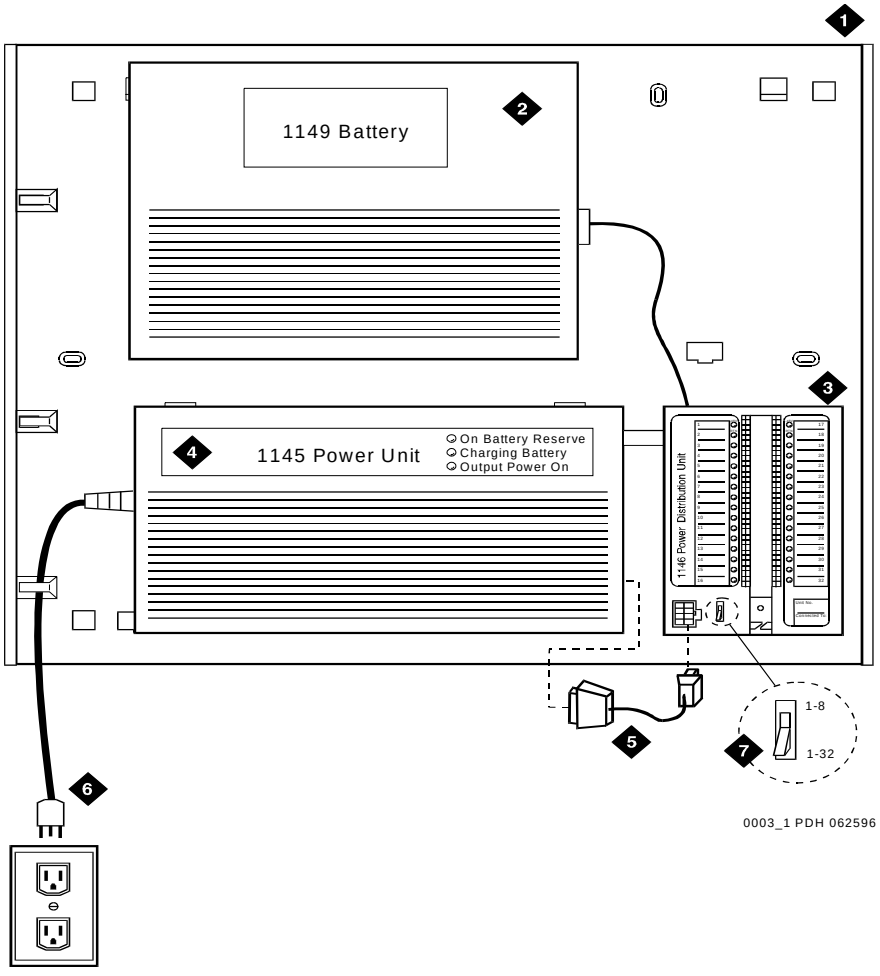


Figure notes

1 Wall Mounting Plate

2 Battery (1149B Shown)

3 1146B2 Power Distribution Unit

4 1145B2 Power Unit

5 Power Cable

6 Unswitched Outlet (120 VAC, 20 Amp or 230 VAC, 15 Amp)

7 Battery Backup Switch Setting

Expanded Power Distribution Unit

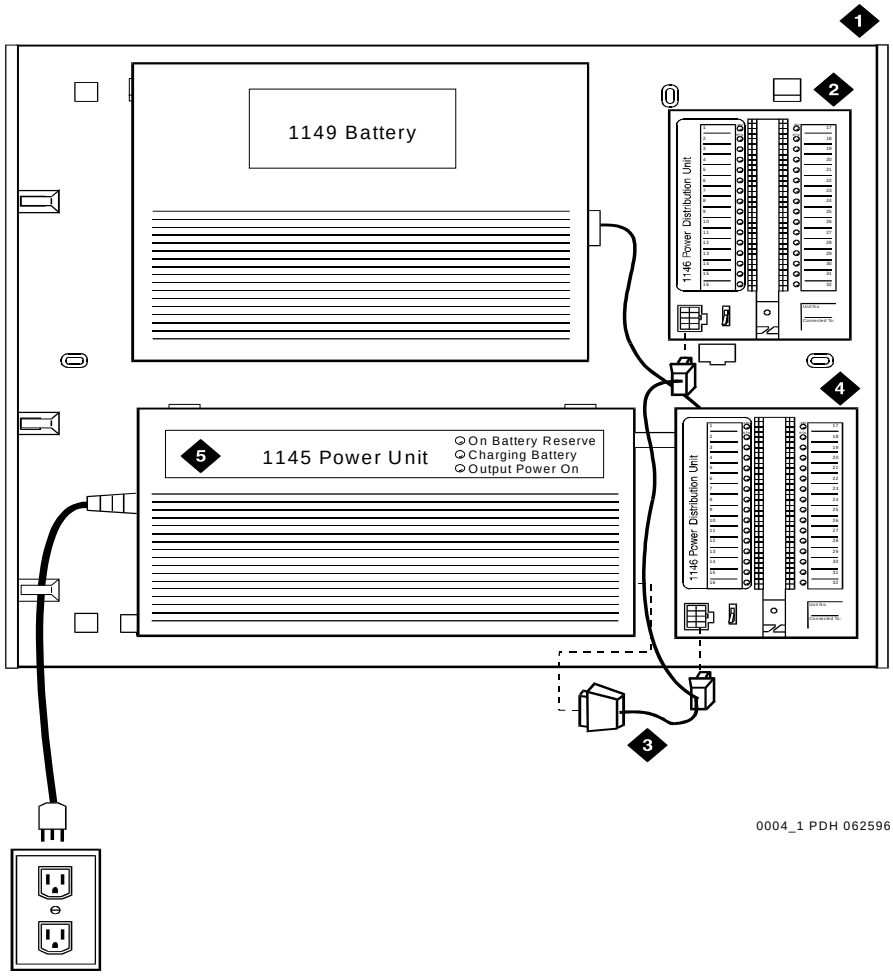


Figure notes

1 Wall Mounting Plate

2 Second 1146B2 Power Distribution Unit

3 “T” Cable (H600-347-G7)

4 First 1146B2 Power Distribution Unit

5 1145B2 Power Unit

Install the Wall-Mounting Plates

The top plate is used for mounting the back-up battery. The bottom plate is used to mount the power supply and distribution units. The plates can be rack-mounted using standard rack-mounting brackets. See “1145B2/1146B2 Mounting Arrangement’’ on page 229.

1. Locate one plate directly below the other one such that the AC power cord (6.5 feet or 2 meters) reaches the electrical outlet from a power supply mounted on the bottom plate. Both plates should be located so the raised letters are right side up.

NOTE:
A maximum of four power supplies can be powered from one dedicated 110 VAC, 20 amp (or 230 VAC, 15 amp) feeder. Use only unswitched outlets (outlets not connected to a wall switch).

2. Secure the wall mounting plates to a standard 3/4 inch (2 cm) thick plywood mounting board. Each mounting plate comes with four #10 x 1/2-inch wood screws.
3. The 1145B2 Power Supply is snap-fit onto the bottom wall mounting plate without tools.
4. An installer-provided insulated ground wire, 16 AWG (#12) (1.2 mm^2) or greater, is required to connect the power supply frame ground lug to an approved ground. The frame ground screw is located next to the AC outlet, to the left of the unit.

Mount the 1146B2 Power Distribution Unit

See the 1146B2 Power Distribution Unit in “Expanded Power Distribution Unit’’ on page 230.

1. Insert and securely tighten the two supplied #8-32 x 1/2-inch shoulder screws (they have an unthreaded section at the top) into the top holes designated for 1146B2 Power Distribution Unit on the bottom plate. Mount the unit on these two shoulder screws, using the key holes on the back of the unit.
2. Secure the unit by inserting the #8-32 x 1 inch screw through the bottom of the unit (just above the wire clips) into the plate and tighten.
3. Set the battery back-up switch option to the 1-32 (down) position to provide battery back-up to all outputs.
4. Connect the power distribution unit to the power supply with the power cable. Refer to the power supply’s right-hand label to locate the output power connection.

Install the Battery Mounting/Wiring

Three types of back-up batteries are used. See ‘‘Back-Up Battery Rating’’ on page 232 for the battery type and rating.

1. Insert two #10-32 x 1/2-inch shoulder screws into the top designated battery holes on the wall mounting plate. Lightly screw in but do not tighten.
2. Place the keyhole slots in the battery bracket on these two screws. The battery cord exits from the right of the bracket. Make sure the label on the battery is visible. Tighten the screws securely.
3. Plug the battery cord into the power supply’s right rear receptacle. The rear receptacle is indicated on the right label.

Back-Up Battery Rating

Battery	Rating
1148B	2.5 amp-hours
1149B	5 amp-hours
1147B	8 amp-hours

Install the Expanded Power Distribution Unit

A second power distribution unit can be installed to provide power to additional devices.

CAUTION:
Total power cannot exceed 275 Watts. The maximum ISDN terminal mixture is twenty four 7500-series and twenty four 8500-series terminals.

The maximum DCP terminal mixture is twenty four 7400-series and twenty four 8400-series or sixty four 8400-series terminals.

The expanded power distribution unit kit contains:

- One 1146B2 Power Distribution Unit
- One “T” Cable
- Two #8-32 x 1/2-inch Shoulder Screws
- One #8-32 x 1 inch Screw
- One Spacer Bracket

Refer to ‘‘Expanded Power Distribution Unit’’ on page 230 while installing the power distribution unit.

1. Set the spacer bracket onto the mounting plate and secure with the #8-32 x 1/2-inch shoulder screws. The spacer bracket is not shown in the figure but is installed behind the top power distribution unit.
2. Slide the keyhole slots in the power distribution unit over the shoulder screws.
3. Insert the #8-32 x 1 inch screw through the distribution unit, through the spacer bracket, and into the plate. The mounting hole is located just above the wire clip. Tighten the screw securely.
4. Set the battery back-up switch to the 1-32 (down) position.
5. Power-down the 1145B2 unit as described on the label on the side of the unit.
6. Remove the output power cable between the 1145B2 and the 1146B2 units. The cable will not be reused.
7. Connect the P1 connector end of the “T” cable to the bottom power distribution unit. Connect the P2 connector to the top distribution unit. Connect the P3 connector to the 1145B2.
8. Power-up the 1145B2 as described on the label on the side of the unit.

Power Up and Test the Power Supply

The following table describes the meaning of the power supply LEDs when lit.

LED Color	Meaning
Green	Power Supply is providing power
Yellow	Battery is charging
Red	Power Supply is on battery reserve

1. Connect the AC power cord to the power supply and route the cord to an appropriate AC outlet using the clips provided on the unit.

NOTE:
A maximum of four power supplies can be powered from one dedicated 100V-120V, 50/60 Hz, 20 amp feeder or 200V-240V, 50/60 Hz, 10 Amp feeder. Use only unswitched outlets.

2. Plug the cord into the outlet. This powers up the power supply.

3 Check AC operation of the 1145B2 Power Supply by monitoring the LEDs:

PASS: Green and yellow LEDs at front of the unit should be lit together. Green means the power supply is providing power. Yellow means the battery is being charged. After the battery reaches full charge (maximum of twenty hours), the yellow LED should go out.

FAIL: If either green or yellow LED is not lit after powering up, check the connections. Test the AC outlet. If power is available and the AC power cord and connections are good, replace the power unit.

4 Disconnect the AC plug on the power supply, this activates the DC supply.

5 Check DC (battery back-up) operation of the 1145B2 Power Supply by monitoring the LEDs:

PASS: The red and green LEDs should be lit together. Red means the power supply is on battery back-up.

FAIL: If either green or red LED is not lit after disconnecting AC power, check the connections. If the connections are good, replace the power unit or batteries.

6 Reconnect AC power to the power supply.

Wire the 1146B2 Power Distribution Unit

Wire endpoints to the 1146B2 while power from the 1145B2 is on. A red LED lights if its associated circuit is connected to shorted wiring or to a shorted telephone.

1 Install cross-connect jumpers to wire from the unit (the label shows polarity) to Pins 7 and 8 of the appropriate information outlet. Route the wires through the clip provided on the unit. If a red LED is on, see ‘‘Reset LEDs on Power Distribution Unit’’ on page 236. See ‘‘Typical Wiring to a Telephone’’ on page 235.

2 Mark lead destinations on the label next to each connector. Also mark the Unit Number and Connectivity information on the label.

Typical Wiring to a Telephone

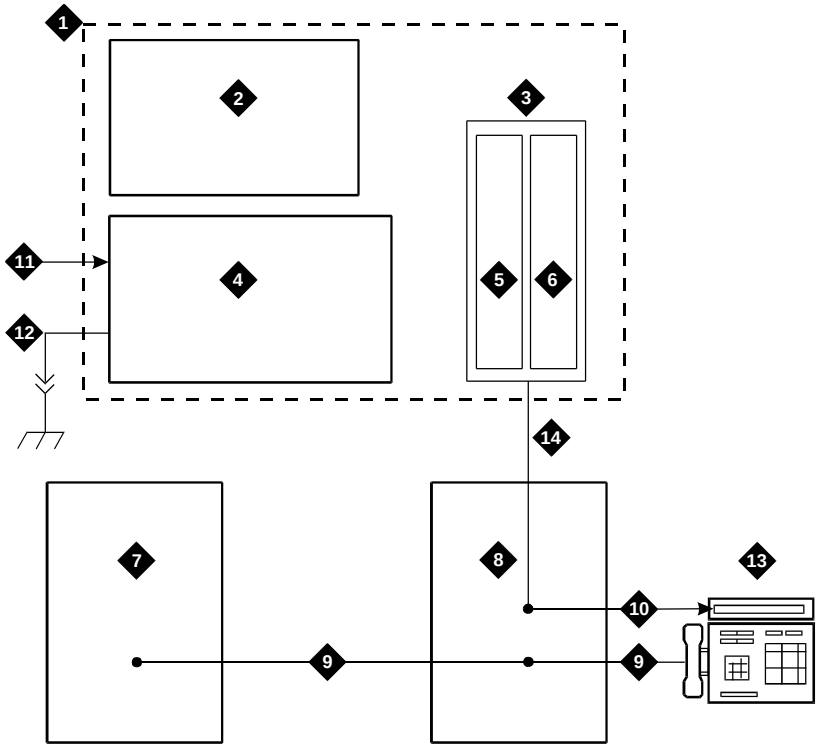


Figure notes

1 Power Supply Kit

2 2.5, 5.0, or 8.0 Amp Hour Battery

3 1146B2 Distribution Unit

4 1145B2 Power Supply

5 Circuits 1-16

6 Circuits 17-32

7 Port Circuit

8 Main Distribution Frame

9 Modular Cord

10 Pins 7 and 8 (Display Terminal Power)

11 AC Input

12 Installer-Provided Ground Wire

13 ISDN/ Display System Protocol Terminal

14 Circuits 1-32

Reset LEDs on Power Distribution Unit

A red LED next to any of the 32 power output connectors indicates a short circuit in the building wiring or the terminal equipment. To reset the LED:

1. Disconnect the terminal equipment from the wall jack.
2. If the LED goes off, the terminal equipment is faulty and must be replaced. If the LED is still lit, find and repair the short circuit in the building wiring.
3. Reconnect the terminal equipment to the wall jack and re-test terminal equipment operation.

1151A1 and 1151A2 Power Supplies

The 1151A1 and 1151A2 power supplies comply with the UL Standard UL 1950, second edition.

Complies	UL 1950
Certified	CSA 22.2
Approved	EN6950
Approved	CE

For safety instructions, see ‘‘Important Safety Instructions for 1151A1 and 1151A2 Power Supplies’’ on page 236. For installation instructions, see ‘‘Connect the 1151A1 or 1151A2 Power Supplies’’ on page 238.

NOTE:
The 1151B1 and 1151B2 power supplies replace the 1151A1 and 1151A2 power supplies and will be available in Summer 2002.

Important Safety Instructions for 1151A1 and 1151A2 Power Supplies

Please read the following helpful tips. Retain these tips for later use.

When using this power supply, the following safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

- Read and understand all instructions.
- Follow all warnings and instructions marked on this power supply.
- This product can be hazardous if immersed in water. To avoid the possibility of electrical shock, do not use it near water.
- To reduce the risk of electric shock, do not disassemble this product except to replace battery.

- This product should be operated only from the type of AC power source indicated on the label. If you are not sure of the type of AC power being provided, contact a qualified service person.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
- Do not overload wall outlets and extension cords as this can result in the risk of line or electric shock.
- Disconnect the cords on this product and refer servicing to qualified service personnel under the following conditions:
    - When the power supply cord or plug is damaged or frayed.
    - If liquid has been spilled into the product.
    - If the product has been exposed to rain or water.
    - If the product was dropped or the housing has been damaged.
    - If the product exhibits a distinct change in performance.
    - If the product does not operate normally by following the operating instructions.

Using 1151A1 and 1151A2 Power Supplies

The 1151A1 and 1151A2 Power Supplies can be used to supply local power to ISDN-T 85xx and 84xx series telephones connected to a media gateway and to the 302C1 Attendant Console that requires auxiliary power for its display. The unit can supply power to adjunct equipment such as S201A and CS201A speakerphones or a 500A Headset Adapter attached to any currently manufactured analog, DCP, or ISDN-T telephone equipped with an adjunct jack.

CAUTION:
The power supply can be used *only* with telecommunications equipment, indoors, and in a controlled environment.

The power supply has a single output of -48 VDC, 0.4 Amps, and can operate from either a 120 VAC 60 Hz power source (105 to 129 VAC) or a 220/230/240 VAC 50 Hz power source (198 to 264 VAC). Input voltage selection is automatic. The output capacity is 19.2 watts.

The power supply can be placed on a flat surface such as a desk. For wall-mounting, keyhole slots are provided on the bottom of the chassis.

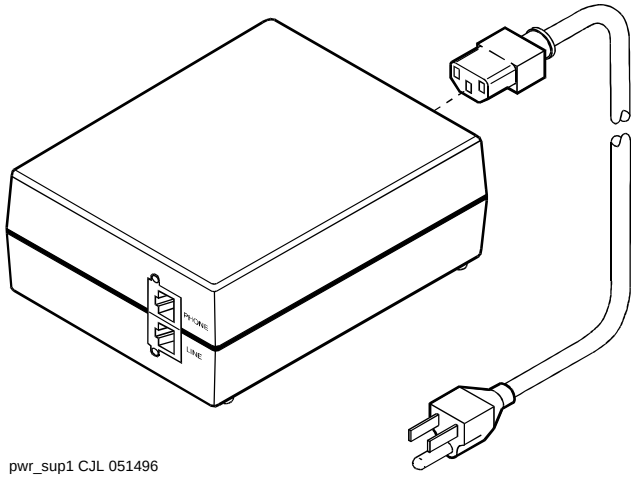
CAUTION:
Do not locate the unit within six inches (15 cm) of the floor.

Connect the 1151A1 or 1151A2 Power Supplies

The 1151A1 is a standard (no battery backup) power supply unit. The 1151A2 is a battery backup version of the 1151A1. Either power supply can support one telephone with or without an adjunct. The maximum loop range is 250 feet (76 meters). Two modular jacks are used. Power is provided on the PHONE jack, pins 7 and 8 (- and +, respectively).

The PHONE and LINE jacks are 8-pin female non-keyed 657-type jacks that can accept D4, D6, and D8 modular plug cables. See an ‘‘1151A1/2 Power Supply — Front’’ on page 238.

1151A1/2 Power Supply — Front



pwr_sup1 CJL 051496

P333T-PWR Power over Ethernet Stackable Switch

The P333T-PWR complies with the UL standard UL 1950, second edition.

Complies	UL 1950
Approved	C22.2 No.950 Std.
Approved	CE

For safety instructions, see ‘‘P333T-PWR Important Safety Instructions’’ on page 239. For installation instructions, see ‘‘Connect the P333T-PWR’’ on page 240.

P333T-PWR Important Safety Instructions

Please read the following helpful tips. Retain these tips for later use. When using this switch, the following safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

- Read and understand all instructions.
- Follow all warnings and instructions marked on this switch.
- This product can be hazardous if immersed in water. To avoid the possibility of electrical shock, do not use it near water.
- The Avaya P333T-PWR switch and modules contain components sensitive to electrostatic discharge. Do not touch the circuit boards unless instructed to do so.
- This product should be operated only from the type of AC (and optional DC) power source indicated on the label. If you are not sure of the type of AC power being provided, contact a qualified service person.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
- Do not overload wall outlets and extension cords as this can result in the risk of line or electric shock.
- Disconnect the cords on this product and refer servicing to qualified service personnel under the following conditions:
- When the power supply cord or plug is damaged or frayed.
    - If liquid has been spilled into the product.
    - If the product has been exposed to rain or water.
    - If the product was dropped or the housing has been damaged.
    - If the product exhibits a distinct change in performance.
    - If the product does not operate normally by following the operating instructions.

Connect the P333T-PWR

Power up—AC input

1 Insert the power cord into the power connector (BUPS or Power Supply) on the rear of the unit. See Figure.

psdlups KLC 032002

Figure notes

1	BUPS connector	**2**	AC connector

2 Insert the other end of the power cord into the electricity supply or the connector on the BUPS.

The unit powers up and performs a self-test procedure. The LEDs flash at regular intervals after the self-test procedure is completed successfully.

Power up—DC input (optional)

The P333T-PWR can operate on the AC input only. However, you may wish to use the optional DC input for the following:

- Backup for the Power over Ethernet ports
- To provide more than 200W for the Power over Ethernet ports

NOTE:
Please refer to the P333T-PWR User's Guide for more information.

Connect the Cables

Connect IP Telephones, PCs, servers, routers, workstations, and hubs

1 Connect the Ethernet connection cable (not supplied) to a 10/100 Mbps port on the front panel of the Avaya P333T-PWR.

NOTE:
You should use standard RJ-45 connections. You must use CAT-5 cable for 100 Mbps operation.

2 Connect the other end of the cable to the Ethernet port of the PC, server, router, workstation, IP phone, switch or hub.

NOTE:
Use a cross cable when connecting the Avaya P333T-PWR to a switch or hub.

3 Check that the appropriate link (LNK) LEDs light up.

Using the P333T-PWR

The P333T-PWR Power over Ethernet Stackable Switch can be used to power 46xx series IP telephones in addition to providing a 10/100 Mbps Ethernet connection. The switch can form part of a stack with the G700 Media Gateway or members of the P330 stackable switching system.

CAUTION:
The Avaya P333T-PWR does not contain any user-serviceable components inside. Do not open the case.

CAUTION:
The P333T-PWR can be used only indoors, and in a controlled environment.

The P333T-PWR has 24 10/100Base-T ports, each of which can supply up to 16.5W using the internal power supply and operates on a 100-240 VAC, 5.3A, 50/60 Hz power source with the option of using the 44~57 VDC, 15A to boost the InLine power.

The P333T-PWR can be placed in a wiring closet or on a flat, stable surface like a desk. Screws are provided for mounting in a standard 19-inch rack.

Connect the Hardware

This section covers the following tasks:

- "Connect Server, UPS, and IPSI cables to Ethernet Switch(es)" on page 242
- "Connect Avaya SCC1 media gateway IPSI and maintenance circuit pack ribbon cables" on page 243
- "Connect the Ethernet switch cables to IPSI circuit packs" on page 249
  - "Avaya MCC1 Media Gateway" on page 249
  - "Avaya SCC1 Media Gateway" on page 250
- "Program the IPSI circuit packs" on page 254
  - "Using DHCP addressing:" on page 255
  - "Using static addressing:" on page 257
- "Verify connectivity to the media servers" on page 260

Connect Server, UPS, and IPSI cables to Ethernet Switch(es)

Refer to *Getting Started with the Avaya™ S8700 Media Server for Multi-Connect Configurations* PDF for a connectivity guide.

Connect Avaya SCC1 media gateway IPSI and maintenance circuit pack ribbon cables

1 Remove the ground plate, upper and lower rear covers from the SCC1 media gateway(s).

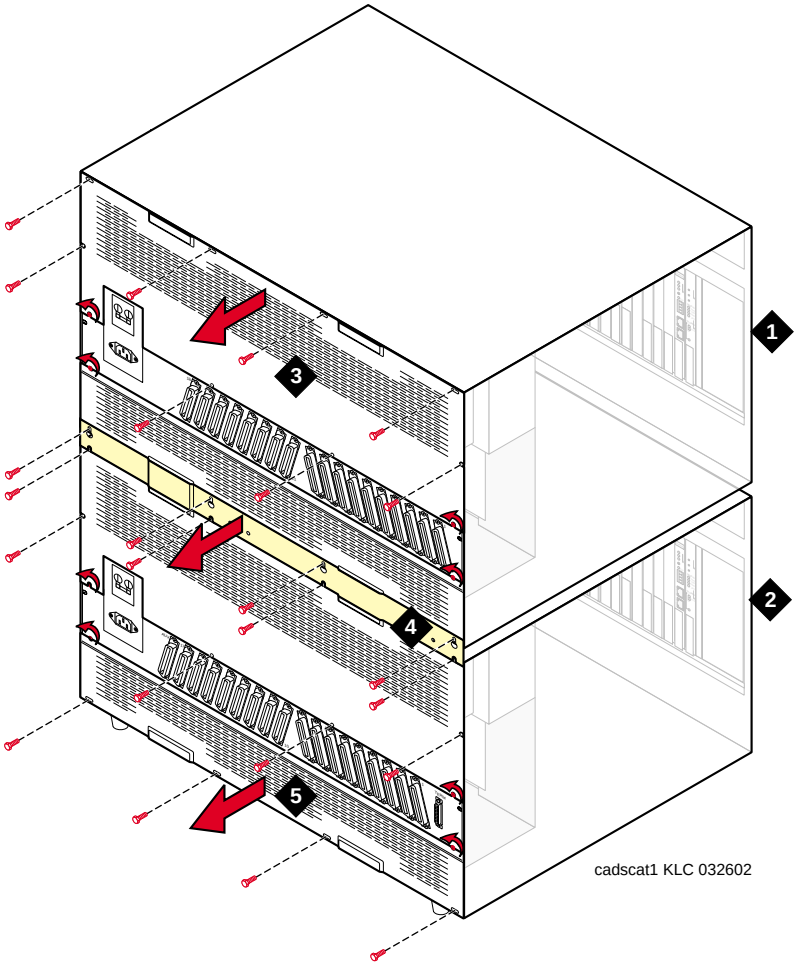


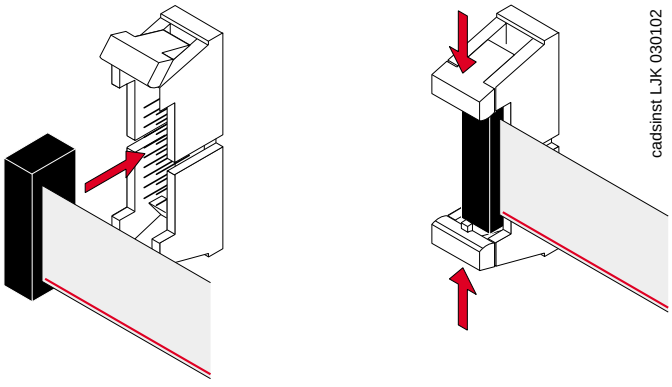
Figure notes

1 Media Gateway B
2 Media Gateway A
3 Upper rear cover
4 Ground plate
5 Lower rear cover

2 Unseat the TN2312AP and TN775D circuit packs in the SCC1 media gateway A. For high/critical reliability configurations unseat the TN2312AP circuit pack in SCC1 media gateway B.

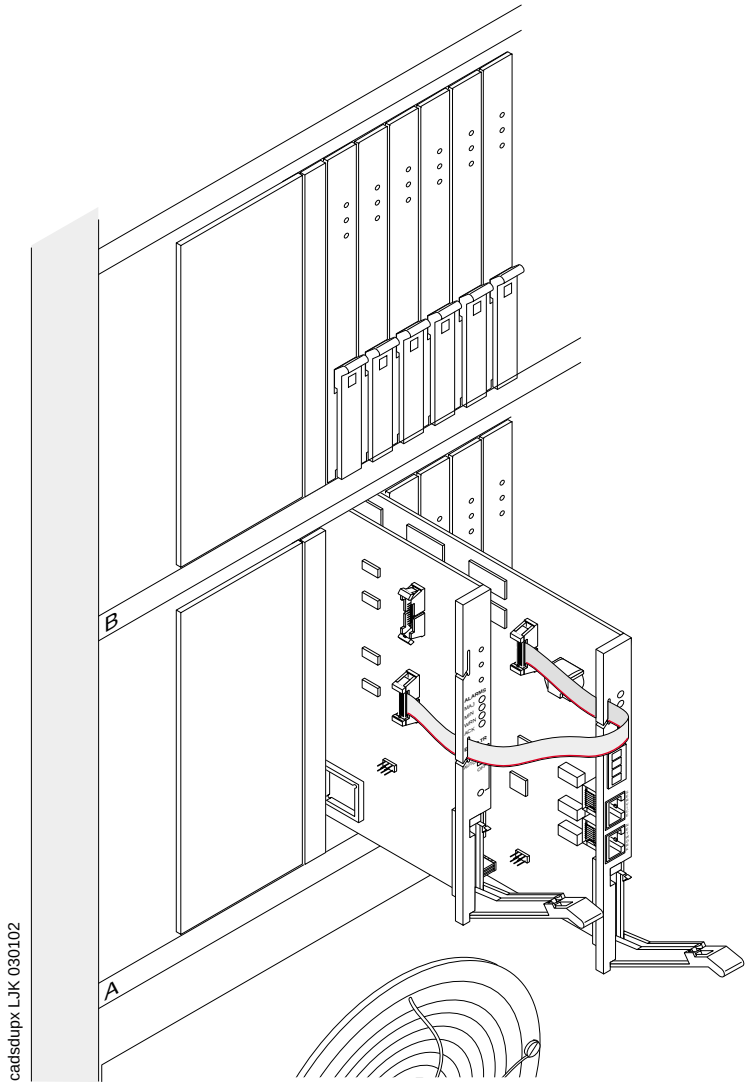
3 With the red line on the bottom (pin 1), attach one end of the short ribbon cable to the connector on the component side of the TN2312AP IPSI circuit pack.

4 Push the tabs on the ends of the connector inward to lock the connector in place.



5 Thread the ribbon through the slot on the front panel.

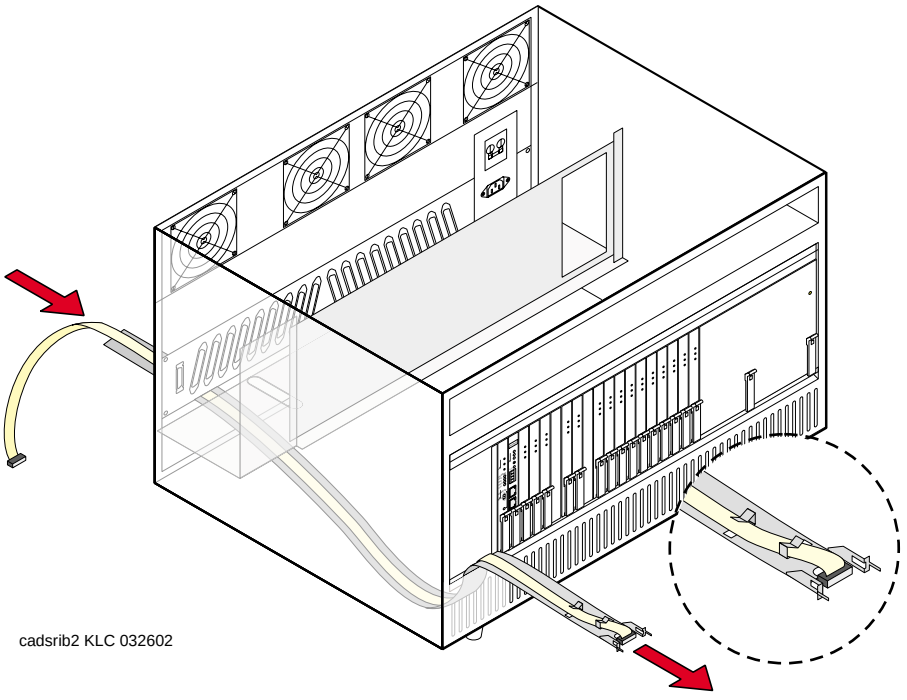
6 Attach the other end of the short ribbon cable to the *bottom* connector on the component side of the TN775D maintenance circuit pack (red line on the bottom).



7 Push the tabs on the ends of the connector inward to lock the connector in place.

8 Thread the ribbon through the lower slot on the faceplate of the TN775D circuit pack.

9 For high or critical reliability configuration use the pass through tool to feed the long ribbon cable through media gateway A.



10 Plug the ribbon cable into the top connector on the component side of the TN775D maintenance circuit pack.

11 Push the tabs on the ends of the connector inward to lock the connector in place.

12 Thread the ribbon cable through the remaining slot on the faceplate of the TN775D circuit pack.

13 Route the cable through the TDM slot in the back of the SCC1 media gateway A and up to SCC1 media gateway B.

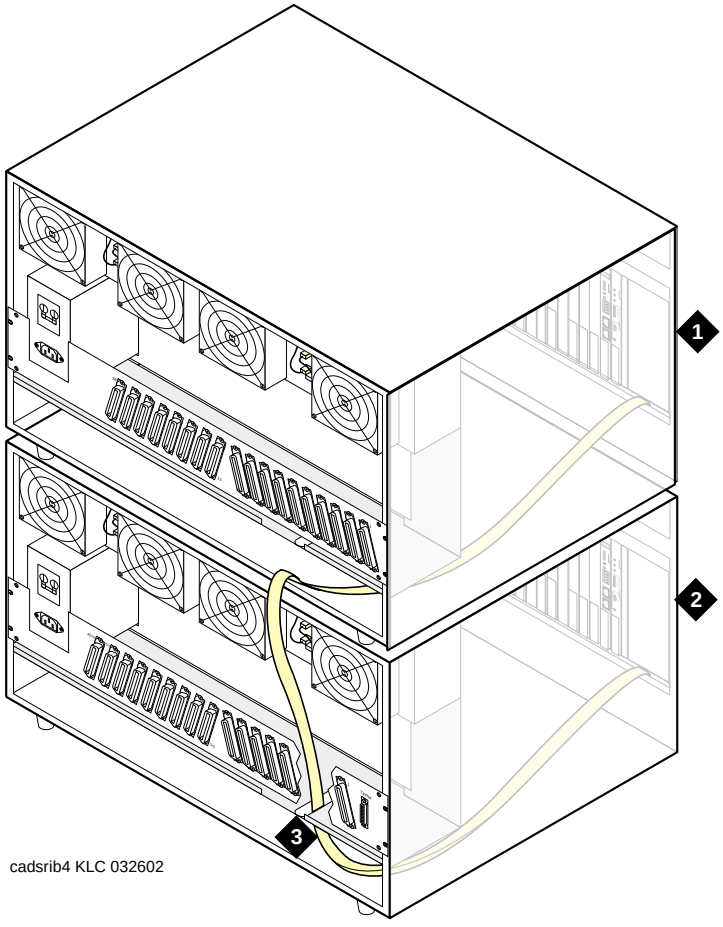


Figure notes

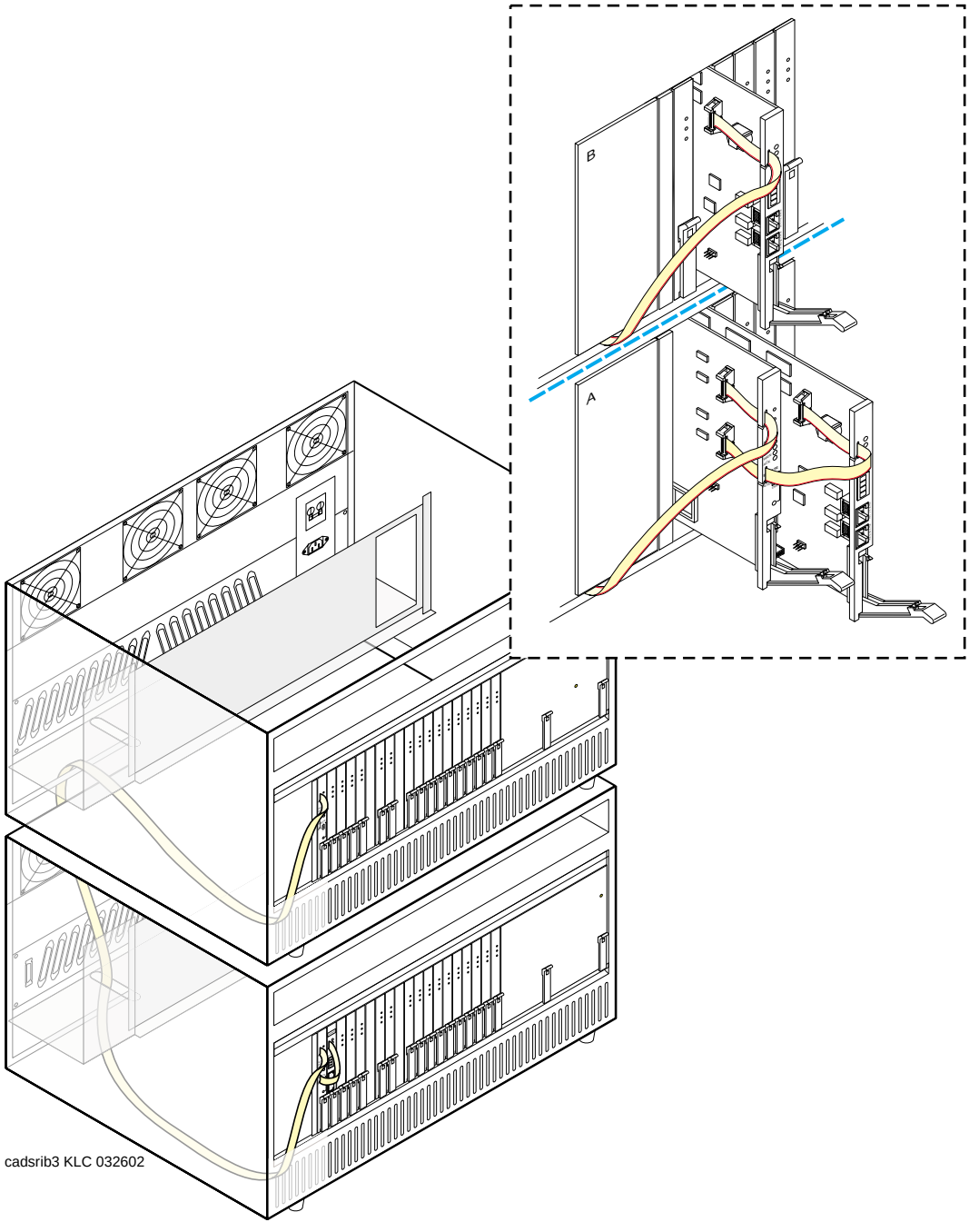
1 Media Gateway B

2 Media Gateway A

3 TDM cable slot

14 Use the pass through tool to feed the long ribbon cable through media gateway B.

15 Connect the long cable to the connector on the component side of the TN2312AP IPSI in media gateway A.



16 Fully insert the TN775D and TN2312AP circuit packs.

17 If the CAT 5 Ethernet cables have already been run to the IPSI circuit packs replace the upper and lower rear covers. Replace the ground plate.

18 If the CAT 5 Ethernet cables have not been run to the IPSI circuit packs go to ‘‘Connect the Ethernet switch cables to IPSI circuit packs’’ on page 249.

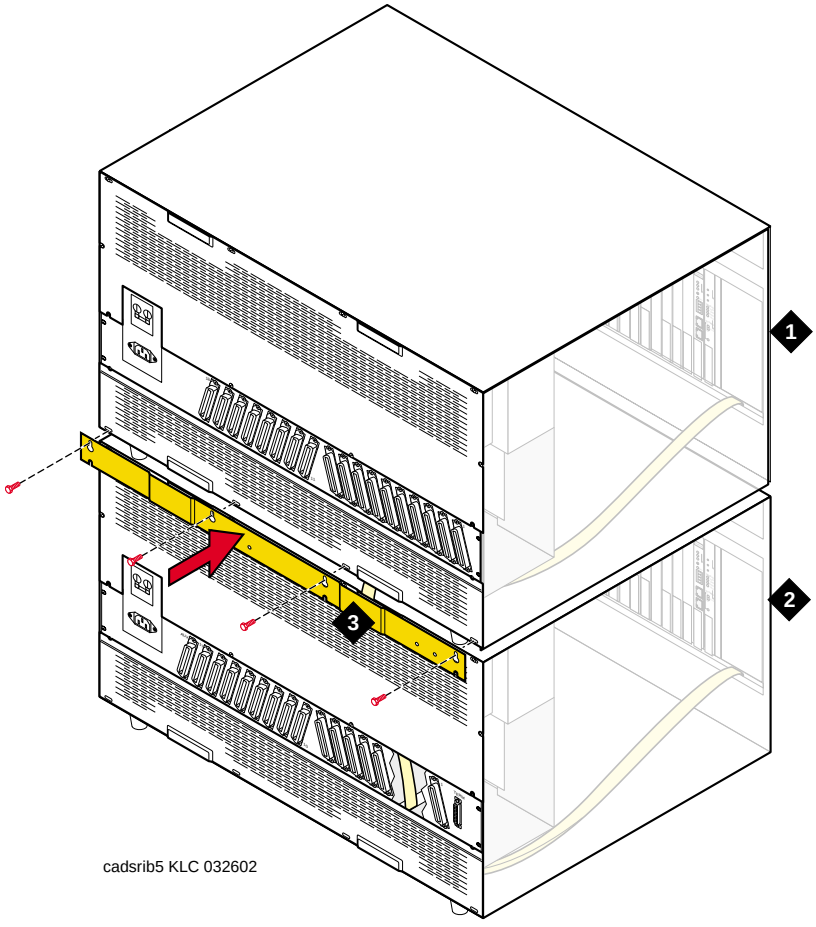


Figure notes

1 Media Gateway B

2 Media Gateway A

3 Ground plate covering TDM cable opening. Note: All cables running between or exiting media gateways use the opening provided for TDM cables.

Connect the Ethernet switch cables to IPSI circuit packs

Avaya MCC1 Media Gateway

Refer to *Getting Started with the Avaya™ S8700 Media Server for Multi-Connect Configurations* PDF for a connectivity guide.

Avaya SCC1 Media Gateway

Refer to *Getting Started with the Avaya™ S8700 Media Server for Multi-Connect Configurations* PDF for a general connectivity guide. Use the following detailed steps to connect the Ethernet cables at the SCC1 media gateway.

1 If not already removed, remove the ground plate. Remove the upper and lower rear covers from the media gateway(s).

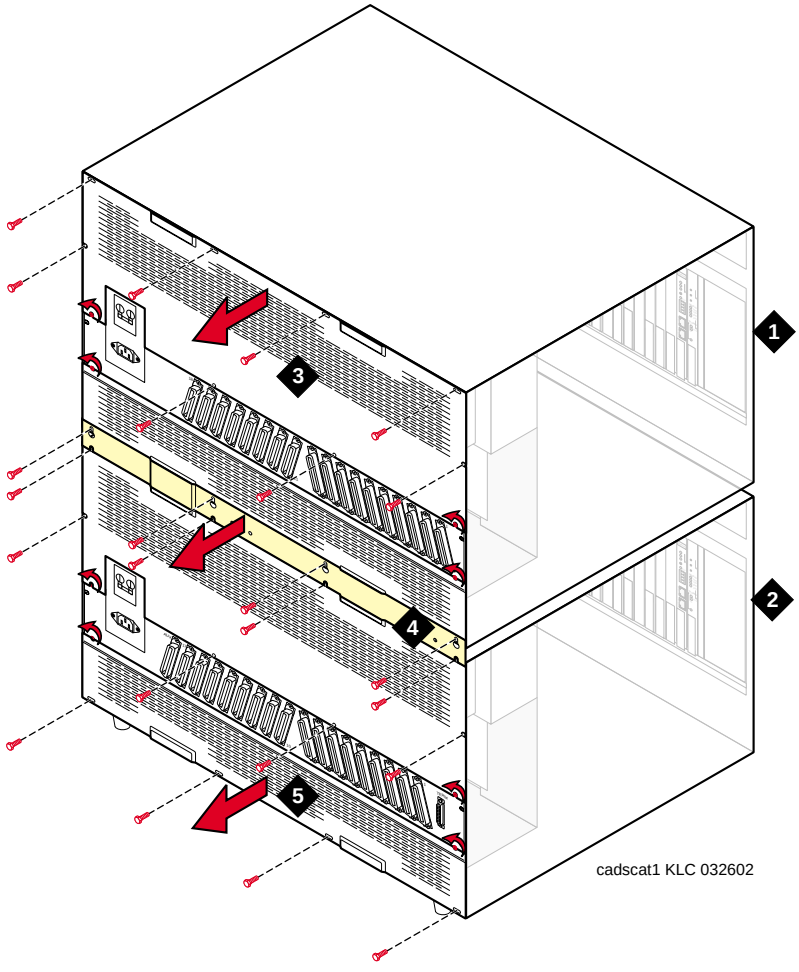
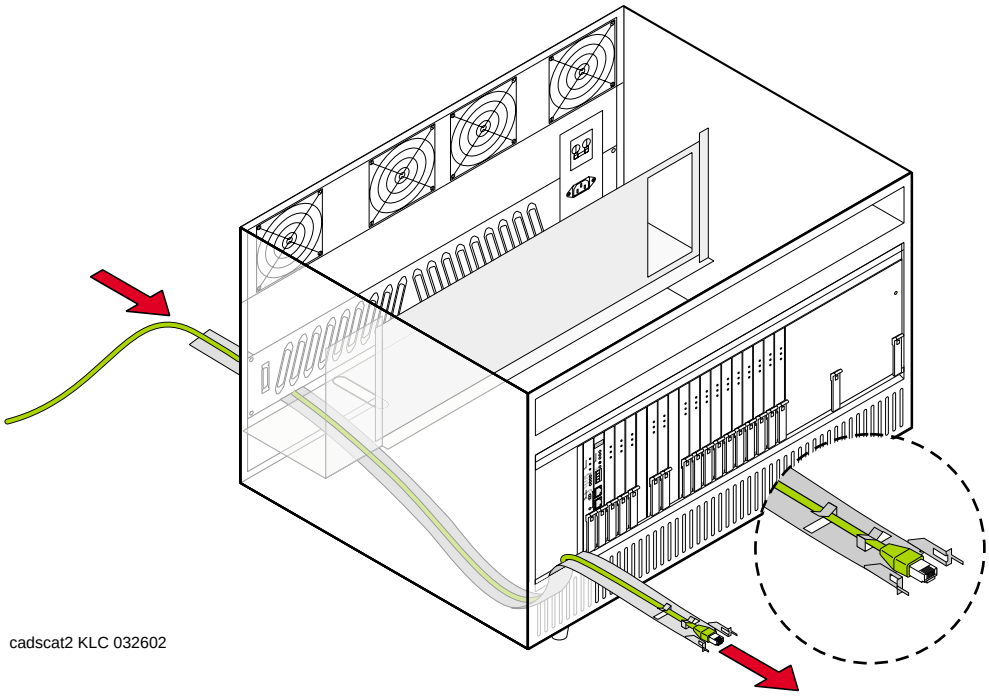


Figure notes

1 Media Gateway B
2 Media Gateway A
3 Upper rear cover
4 Ground plate
5 Lower rear cover

2 Run the 25- or 50-m green CAT5 cable from the Ethernet switch through the media gateway, using a cable pass-thru tool.



3 Install the clamp on ferrite on the CAT5 Ethernet cable. This ferrite must be as close to the exit of the media gateway as possible.

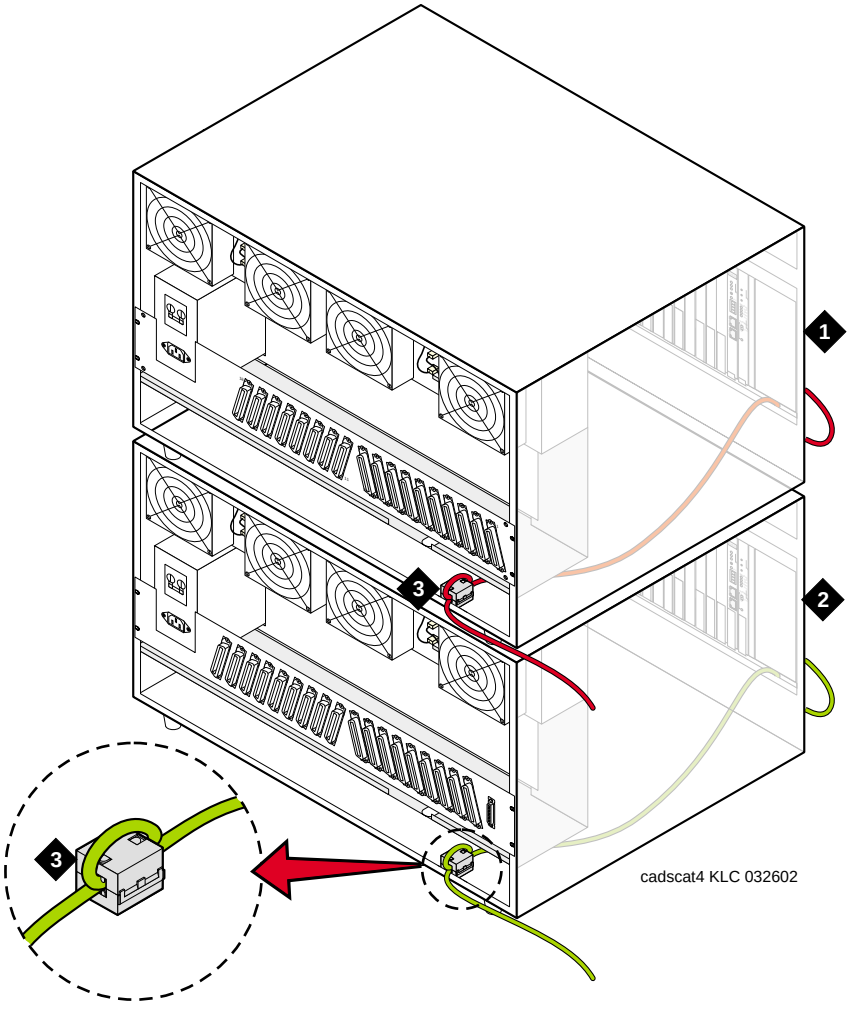


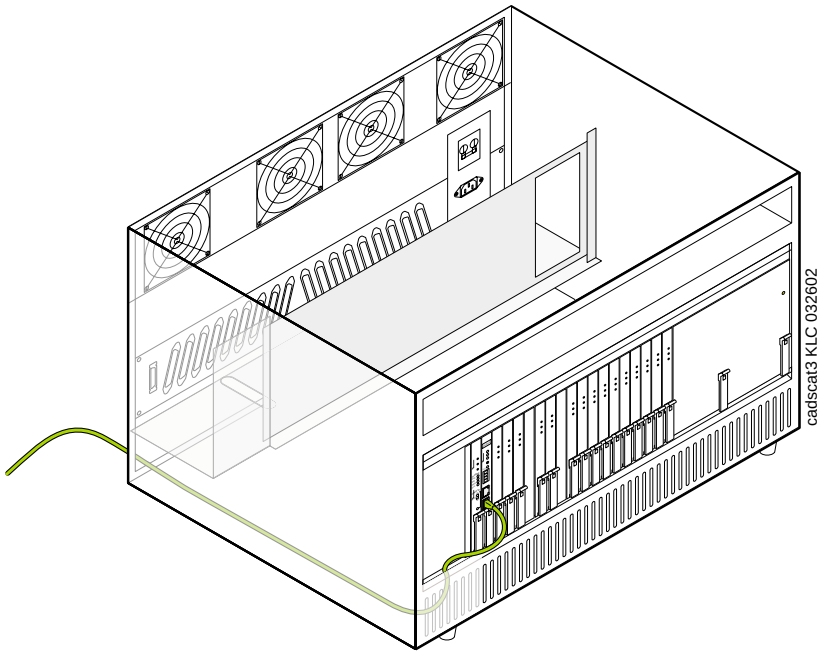
Figure notes

1 Media Gateway B

2 Media Gateway A

3 Clamp on ferrite

4 Connect the green CAT5 cable to the bottom connector on the front of the TN2312AP IPSI circuit pack in media gateway A.



5 Replace the rear covers and the ground plate. Dress the CAT5 Ethernet cable to exit either the left or right side of the media gateway.

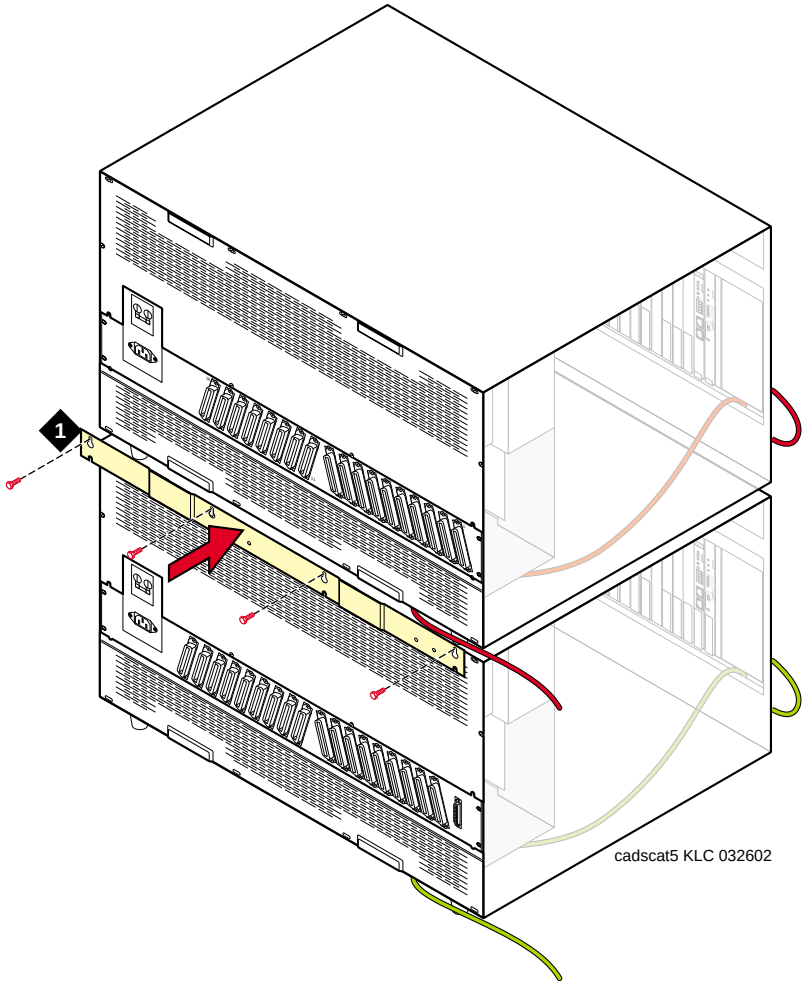


Figure notes

1 Ground Plate

6 For high or critical reliability, repeat steps 1 through 5 for the IPSI circuit pack in media gateway B using a red CAT5 Ethernet cable.

7 Replace the upper and lower rear covers. Replace the ground plate.

Program the IPSI circuit packs

IP server interface circuit packs get IP addresses in one of two ways:

- Using dynamic host configuration protocol (DHCP—most common)
- Using static IP addressing (less common)

The IPSI circuit packs associated with the S8700 Media Server for Multi-connect configurations use the DHCP method. In rare cases the S8700 Multi-connect IPSIs may use the static addressing method.

IPSI circuit packs associated with the S8700 Media Server for IP connect configurations always use the static addressing method.

NOTE:
Before beginning, read this procedure to familiarize yourself with it. With DHCP addressing there are certain sequences that need to be completed prior to a predetermined time-out interval.

CAUTION:
When reusing TN2312 circuit packs that have previously had a static address programmed you must erase the existing IP address. Failure to do this may result in serious network problems for the customer. Use the following procedure to erase an existing IP address assignment:

- Plug the TN2312 into a tone clock slot or reseat it (unplug and plug in) if it is already plugged in.
- While the letters IP are flashing on the LED display (five seconds) press the recessed push button on the faceplate of the circuit pack.
- The TN2312 is now ready to have another static IP address programmed or a Switch ID and Cabinet number programmed for use in a DHCP configuration.

NOTE:
When the IPSI circuit pack is first inserted into a carrier the faceplate LED display may present random characters, dots, or lines. This should not last more than one second. Ignore the display during this period.

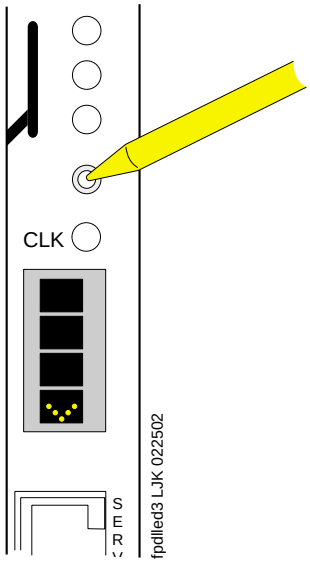
Using DHCP addressing:

For the IPSI circuit packs to get IP addresses dynamically, you must first assign the switch ID (A through J) and the cabinet number (01 through 64) to each IPSI circuit pack.

1 Fully insert the TN2312 IPSI circuit pack. If necessary reseat the circuit pack to begin the programming sequence. For high and critical reliability configurations make sure the IPSI being programmed is the ***standby*** tone clock.

NOTE:
You must do the following steps within 5 seconds after inserting the circuit pack.

2 Insert a pen, golf tee, or similar object (no graphite pencil) into the recessed push button switch.



NOTE:
If you have only one multi-connect configuration, the default switch ID is A, which was administered earlier. The second configuration would be B and so on. The switch ID is ***not*** the carrier letter.

3 While the display is flashing, press the button until the switch ID (A through J) shows on the top character of the LED display. When the correct letter shows, stop. It will flash a few times (5 seconds) then stop. The next character down will begin to flash.

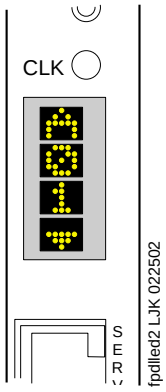
NOTE:
If you pass up the letter/number you want, you must either cycle through all the letters/numbers to get to the letter/number you want or reinsert (reseat) the circuit pack and start at the beginning.

NOTE:
The number to program is the cabinet number ***not*** the port network number. If you have more than one IPSI in a cabinet, they all have the same cabinet number even if it is a split cabinet with 2 or more port networks.

4 While the first digit of the cabinet number is flashing, press the button until the correct tens digit (0 through 6) shows on the display. When the correct number shows, stop. It will flash a few times then stop (five seconds). The second digit of the cabinet number will begin flashing.

5 While the second digit of the cabinet number is flashing, press the button until the correct units digit (0 through 9) shows on the display. When the correct number shows, stop. The units digit will flash a few times then stop (five seconds).

6 All segments of the display will go dark for one second and then the Switch ID and Cabinet number will be displayed in the top three characters of the LED display. A ’V’ will be shown in the fourth character (bottom) of the display. When an address has been assigned to the IPSI by the DHCP server, the center of the ’V’ will be filled in to form the bottom half of a diamond in the display.



7 For high or critical reliability configuration, repeat steps 1 through 6 for the IPSI in carrier B.

8 Press excess ribbon against the circuit packs.

Using static addressing:

For the IPSI circuit packs to get static IP addresses, you must administer them directly through the Ethernet port connection on the IPSI faceplate (top port). See ‘‘Connecting directly to the IPSI’’ on page 258.

Connecting directly to the IPSI

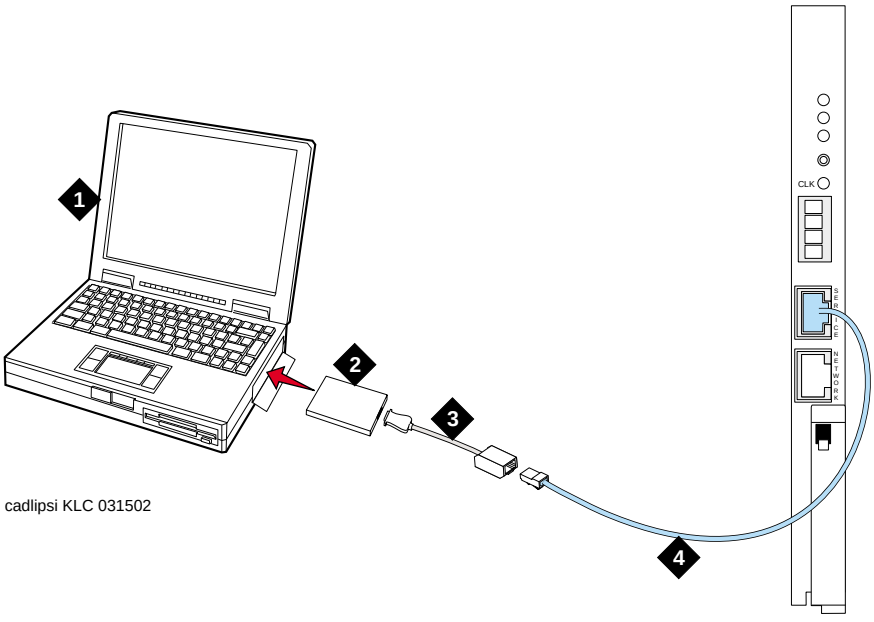


Figure notes

1	Services laptop	**3**	NIC adapter cable (if necessary)
2	PCMCIA Network Interface Card (NIC)	**4**	Green CAT5 cable to IPSI

1 Connect the services laptop computer to the top port on the IPSI circuit pack faceplate.

2 Click **Start** > **Run** to open the Run dialog box. (services laptop)

3 Type **command** and press **Enter** to open a MSDOS Command Line window.

4 Type **arp -d 192.11.13.6** and press **Enter** to clear the ARP cache in the laptop. This command will respond with one of the following:

- The command line prompt when the cache has been cleared.
- The phrase: The specified entry was not found. This is returned when the specified IP address does not currently contain an entry in the ARP cache.

5 Type **telnet 192.11.13.6** and press **Enter** to open the Telnet window and connect to the IPSI.

Prompt = [IPSI]:

NOTE:
While connected to the IPSI type **help** or **?** to obtain online help. Most commands have two or three letter abbreviations.

6 Type **ipsilogin** and press **Enter**. (abbreviated command = **il)**

7 Log in as **craft**.

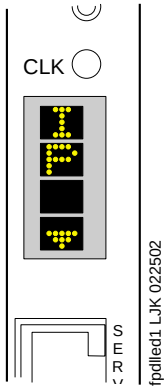
Prompt = [IPADMIN]:

8 Type **set control interface <ipaddr><netmask>**, where <*ipaddr*>is the customer-provided IP address and <netmask> is the customer provided subnet mask. Press **Enter.**

9 If required type **set control gateway <gateway>**, where <gateway> is the customer-provided IP address for their gateway. Press **Enter.**

10 If required use the **set vlan priority, set vlan tag, set vlan id** and **set diffserv** commands to enter VLAN and diffserv parameters for the IPSI. Use the **help <command>** to obtain syntax guidelines for these commands.

11 Check the LCD. Verify that it has an I P with a filled-in V showing at the bottom. (See "IP Server Interface LEDs")



12 Type **quit** to logoff the IPSI.

NOTE:
Control network settings (IP address, subnet mask, and gateway) will be placed into effect when the user exits the IPADMIN session.

13 Disconnect the laptop from the faceplate.

NOTE:
Always use the **arp -d 192.11.13.6** command (see step four) to clear the ARP cache on the laptop before connecting to another IPSI. If the cache is not cleared the laptop will appear to ’hang’ and will not connect to the next IPSI.

14 Repeat for each IPSI circuit pack.

Verify connectivity to the media servers

The following administration is done on a computer used to access the Avaya S8700 Media Server using the S8700 Media Server Web Interface.

NOTE:
We recommend you be on the active media server.

1 Click **Execute Pingall** and select “Other server(s), All IPSIs, UPS(s), Ethernet switches.” to verify connectivity to these units.

Completing the Installation Administration

This section covers the following tasks:

- ‘‘Upgrade the IPSI firmware (if necessary)’’ on page 261
- ‘‘Upgrade Cajun Ethernet Switch Firmware’’ on page 262
- ‘‘Verify translations’’ on page 262
- ‘‘Enable and Disable Ethernet Switch Ports’’ on page 262
- ‘‘View alarms’’ on page 263
- ‘‘Back up the media server’’ on page 264
- ‘‘Release busied out media server’’ on page 265
- ‘‘Register the S8700 Multi-Connect configuration’’ on page 265

Upgrade the IPSI firmware (if necessary)

The following administration is done on the services laptop computer connected to the **active** Avaya S8700 Media Server using both the web-based administration application and an ASA connection.

1. WEB - Click **View IPSI Version** and select "Query All" to verify that all IPSI circuit packs have the required IPSI firmware version.
2. ASA - Enter the command **list ipserver-interface <return>** to determine which IPSI in high/critical configuration port networks is active.
3. WEB - Click **Download IPSI Firmware** and select the start time, which IPSIs to download to, and the file to download. Firmware download files are obtained at http://support.avaya.com. If an Internet connection is available through the customer’s network, firmware files can be downloaded directly to the servers. If an Internet connection is not available, firmware files will have to be made available from the services laptop. Use the **Upload Files to Server (via browser)** to move files from the laptop to the server. Use the **Download Files to Server (from web)** to move files from a server on the web to the S8700 Media Server.

NOTE:
It is acceptable to download new firmware to an active IPSI. However, whenever possible, activate the new firmware in a standby IPSI.

4. WEB - For inservice systems click **Activate IPSI Upgrade** and select an individual standby (high/critical configurations) IPSI and **Begin activation now** to activate the new IPSI firmware. Repeat this step for each standby IPSI equipped. For duplex configurations brief service interruptions are unavoidable. Schedule IPSI activation for a low traffic period of time on the **Activate IPSI Upgrade** screen.

5 ASA - For inservice systems (high/critical configurations) move the 'active' IPSI by using the **set ipserver-interface *cab/carrier*** command. Issue this command for each IPSI equipped cabinet.

6 WEB - Repeat step 4 with the new standby IPSIs.

7 WEB - Click on **View Firmware Activation Status** to determine when the activation is completed.

8 WEB - Click **View IPSI Version** and select "Query All" to verify that all IPSI circuit packs have the required IPSI firmware version.

Upgrade Cajun Ethernet Switch Firmware (if necessary)

Refer to Upgrading the Avaya S8700 Media Server Configurations, Upgrade Cajun Ethernet Switch Firmware for the information.

Verify translations

The following administration is done on a computer used to access the Avaya S8700 Media Server using SAT Emulation on ASA.

1 Type **list configuration all** and press **Enter** to view all the administered circuit packs in the S8700 Multi-Connect configuration.

2 Type **list ipserver-interface** and press **Enter** to verify the location of the IPSI circuit packs.

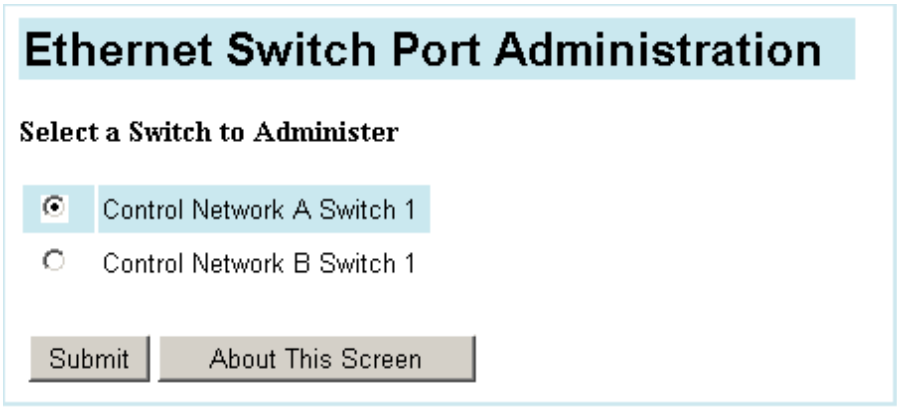
3 Check the administration status on the following items:

- list station
- list trunk-group
- list hunt-group
- list vdns

Enable and Disable Ethernet Switch Ports

The following administration is done on the services laptop computer connected to the Avaya S8700 Media Server using the S8700 Media Server Web Interface.

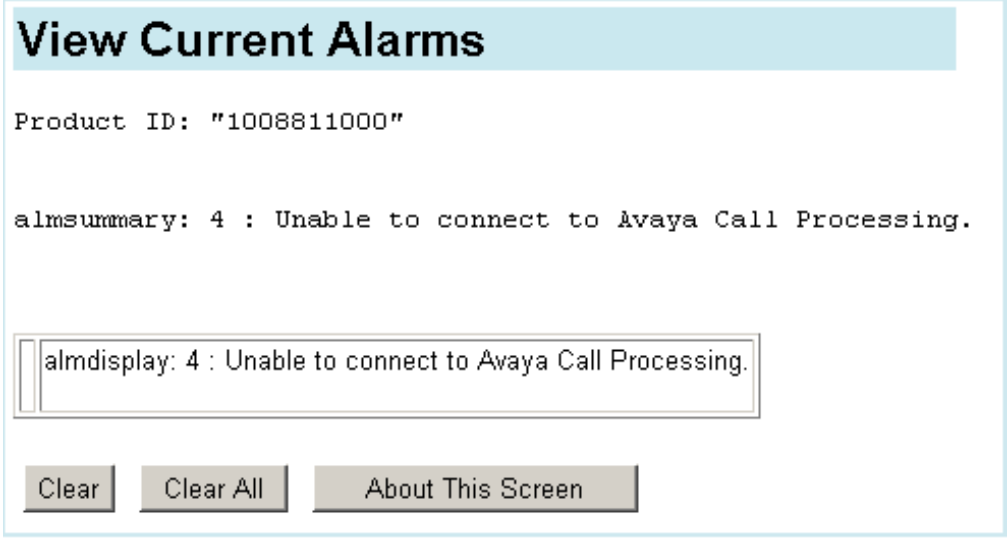
1 Click **Enable/Disable Ethernet Switch Ports** to enable the Ethernet ports being used and to disable the unused Ethernet ports.



View alarms

The following administration is done on a computer used to access the Avaya S8700 Media Server using the S8700 Media Server Web Interface.

1 Click **View Current Alarms** to view any alarms.


View Current Alarms
Product ID: "1008811000"
almsummary: 4 : Unable to connect to Avaya Call Processing.
almdisplay: 4 : Unable to connect to Avaya Call Processing.
Clear
Clear All
About This Screen

2 Resolve all alarms not involving the busied out standby media server. Refer to Maintaining the S8700 Media Server document to resolve alarms.

Back up the media server

The following administration is done on a computer used to access the active media server using the S8700 Media Server Web Interface.

1 Place the PCMCIA flashcard into the bottom slot of the PCMCIA drive in the active media server.

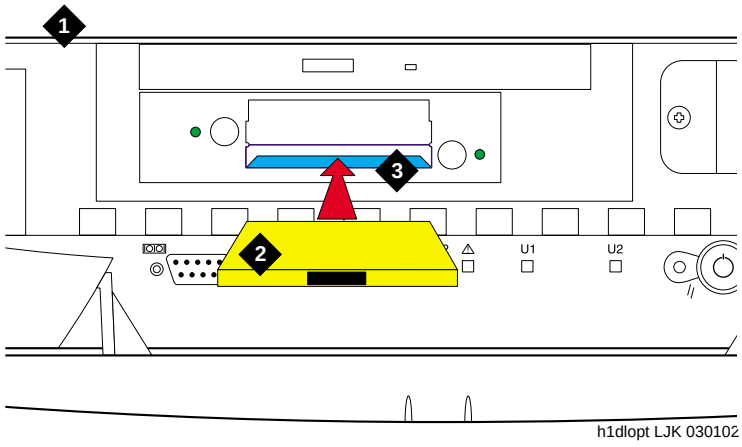


Figure notes

1 Media Server

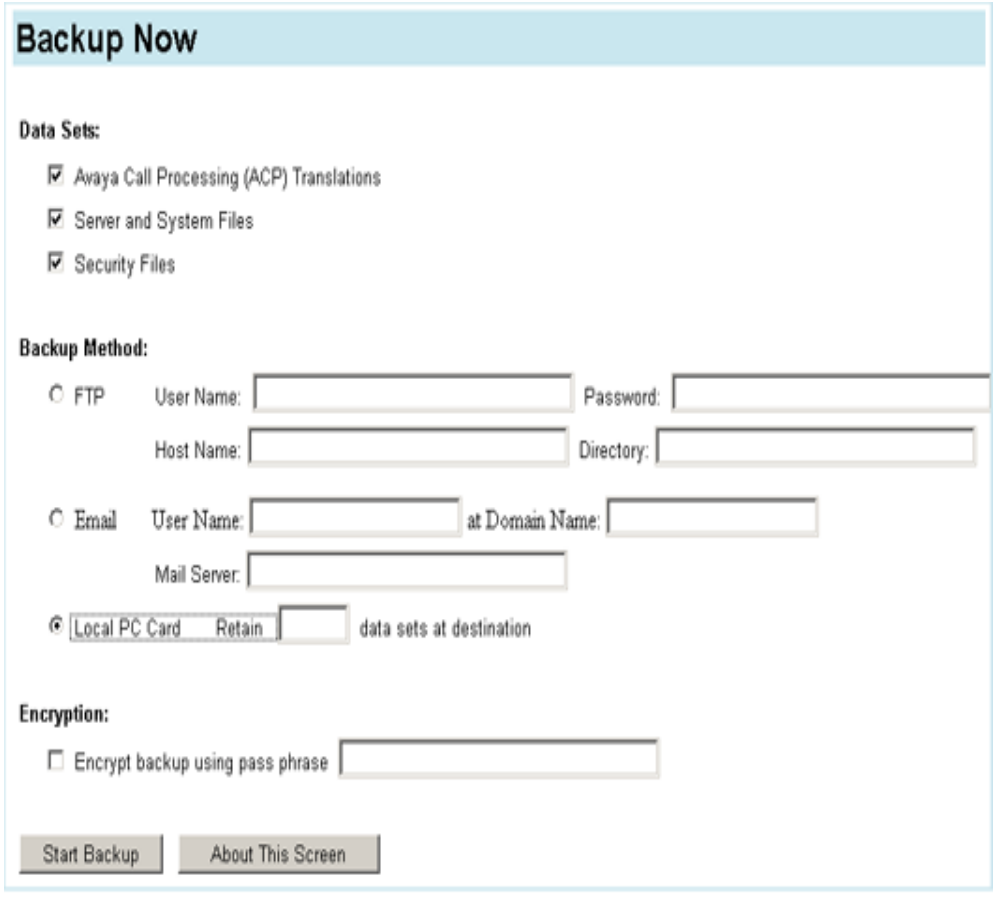
2 PCMCIA flashcard

3 Bottom slot of PCMCIA drive

2 Click **Backup Now** and select all applicable data sets.

Select “Save ACP translations prior to backup” to save translations to the media server’s internal disk drive before backing up the data.

NOTE:
Customer’s may want to back up using another method.



3 Select Local PC card as the backup method.

4 Click **Backup now** to back up all data to the PCMCIA flashcard.

Release busied out media server

The following administration is done on a computer used to access the **busied** media server using the S8700 Media Server Web Interface.

1 Under Server, click **Release Server** to release the standby media server from busy out mode.

2 Under Server, click **View Summary Status** to verify that the media server is no longer in busy out mode and verify the health of both media servers.

Register the S8700 Multi-Connect configuration

1 Follow existing process and procedures to register the Avaya™ S8700 Media Server for Multi-Connect Configurations.

Accessing the Avaya S8700 Media Server

To administer the Avaya S8700 Media Server, you must be able to access it. Personal computers and services laptop computers equipped with a network PCMCIA card and Avaya Site Administration (ASA) and a Web browser are the primary support access for S8700 Multi-Connect configuration initialization, aftermarket additions, and continuing maintenance.

You can access the Avaya S8700 Media Server in one of three ways: directly, remotely over the customer's local area network (LAN), or over a modem. A direct connection and over the customer's LAN are the preferred methods. Remote access over a modem is for Avaya maintenance access only.

This section covers the following tasks:

- Accessing the Avaya S8700 Media Server Directly
- Accessing the Avaya S8700 Media Server Remotely over the Network
- Accessing the Avaya S8700 Media Server Remotely over a Modem

Accessing the Avaya S8700 Media Server Directly

You access the Avaya S8700 Media Server directly by plugging a computer into the services access port, which defaults to port 2 (Eth1), on the back of the media server. See ''Services laptop computer connected directly to the media server'' on page 267. You must use a crossover cable with an RJ45 connector on each end. Plug the other end into the network connector (NIC card) on the your computer. You may need a network interface card (NIC) adapter.

Services laptop computer connected directly to the media server

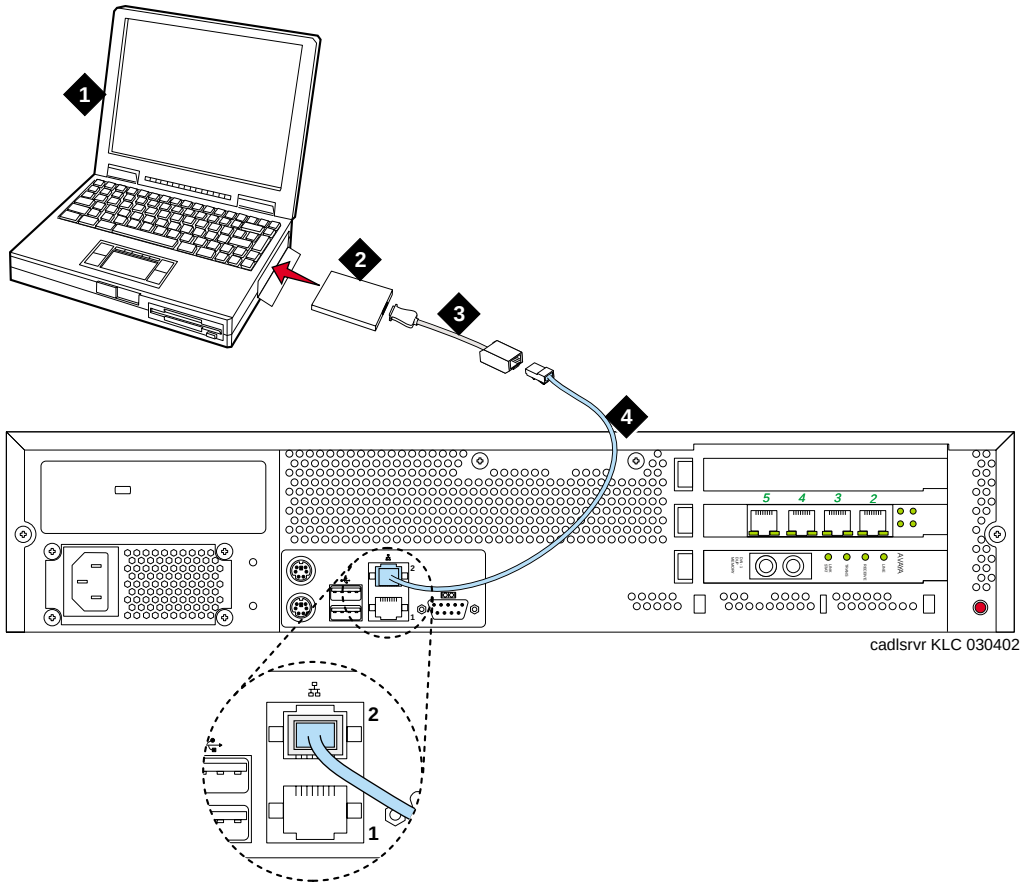


Figure notes

1	Services laptop	**3**	NIC adapter cable (if necessary)
2	PCMCIA Network Interface Card (NIC)	**4**	Black CAT5 Crossover cable

Once connected, you can administer the media server using three tools:

- Media server web interface for server-specific administration.
- Linux shell interface for server-specific administration.
- Avaya Site Administration for Avaya MultiVantage™ software features
- A command line interface in a Telnet window (SAT) for Avaya MultiVantage™ software features.

Media Server Web Interface

You can access the media server web interface by either connecting directly to the services port on the media server (see“Services laptop computer connected directly to the media server’’ on page 267) or connecting over the customer’s network.

Connected to the services port

To use the media server web interface, open either the Netscape or MS Internet Explorer browser. In the Location/Address field, type **192.11.13.6**. When prompted, log in to administer the S8700 media server and the Avaya MultiVantage™ software features.

Connected to the customer network

To use the media server web interface, open either the Netscape or MS Internet Explorer browser. In the Location/Address field, type the **active server** name or IP address. When prompted, log in to administer the S8700 media server and the Avaya MultiVantage™ software features. You may also connect directly to an individual server using its name or IP address.

Avaya Site Administration

To use Avaya Site Administration, open the application and select the configuration you want to access. When prompted, log in to administer the Avaya MultiVantage™ software features. See ‘‘Installing Avaya Site Administration’’ on page 269 for information on installing Avaya Site Administration.

Accessing the Avaya S8700 Media Server Remotely over the Network

You can access the Avaya S8700 Media Server from any computer connected through the LAN. To access either media server, use the IP address assigned to the media server you want to access. You can also use the **active server** address to connect automatically to the media server that is active. Once connected, you can administer the media server using three tools:

- Media server web interface for media server-specific administration and call processing features
- Avaya Site Administration for the MultiVantage software (only available on the active media server)
- A command line interface via a Telnet window for Linux shell commands.

Accessing the Avaya S8700 Media Server Remotely over a Modem

NOTE:
Remote access over a modem is for Avaya maintenance access only.

You can access the media server through an analog modem.

Follow these steps to connect a modem to the Avaya S8700 Media Server.

1. Connect a modem to one of the USB ports on each media server using the USB cable that comes with the modem.
2. Connect one end of the modem line cord to the analog-line port on each modem.
3. Connect the other end of the line cord to the customer supplied remote access line.

NOTE:
Both modems connect to the same remote access line. Presentation (RJ11) of this line at each S8700 Media Server is locally engineered.

Installing Avaya Site Administration

If you do not have ASA on your computer, make sure your PC or laptop first meets the minimum requirements described in ‘‘Minimum requirements to run ASA’’ on page 269:

Minimum requirements to run ASA

Operating systems MS Windows 95 MS Windows 98 MS Windows NT 4.0 MS Windows 2000	**Processor/RAM** 486SL/66/16 MB Pentium/32 MB Pentium/64 MB Pentium-class 300 MHz/64 MB
Graphics adapter	SVGA with minimum screen resolution of 800 x 600
Floppy disk drive	3-1/2 in. 1.44-MB floppy disk drive
CD-ROM	CD-ROM drive (required to install ASA from CD)
Available hard disk space	A minimum of 100-MB free hard disk space is required. The requirement for disk space depends on the size and number of configuration data sets.
Printer port	Standard PC or network printer port is required for connecting to a printer to produce station button labels.
Network adapter	Required for network access to the Avaya S8700 Media Server, AUDIX, and other network-connected systems.
Free serial ports	One free serial port capable of 9600-bps operation is required for a connection to each serial device (UPS). We recommend that PCs have at least a 16550A UART or 16550A UART simulator (capable of 56 kbps DTE-speed connections). USB and internal modems should emulate this hardware. A second serial port is required for simultaneous connection to AUDIX through a serial connection.

You can install ASA on your computer two different ways: from the Avaya Site Administration CD or from the S8700 Media Server.

From the ASA CD

Place the ASA CD in the CD-ROM drive and follow the installation instructions in the install wizard.

From the S8700 Media Server

1. Connect to one of the media servers either directly or through the network from the computer you want ASA to be installed on.
2. Access the media server web interface by typing in the Location/Address field 192.11.13.6 (direct connect) or the IP address or the domain name of the media server (over the network).
3. Log in and get to the main menu.
4. Click on Download ASA to download Avaya Site Administration to your computer.
5. Follow the installation instructions in the install wizard.

To start ASA, click on

Start > Programs > Avaya Site Administration.

ASA supports a terminal emulation mode, which is directly equivalent to using SAT commands on a dumb terminal or through a Telnet session. ASA also supports a whole range of other features, including the GEDI and Data Import. For more information refer to the Help, Guided Tour, and Show Me accessed from the ASA Help menu.

Testing the Complete Configuration

This section provides tests for the complete configuration, including the control and bearer networks and the telephones and consoles.

This section provides tests to:

- review the status of the configuration
- test the duplication link to the media servers
- test the IP server interfaces, expansion interfaces, and TDM buses in the port networks.
- test the telephones and other equipment.

These tests verify that the Time Division Multiplexing (TDM) cables, terminators, and the Inter-Cabinet Cables (MCC1 Media Gateway) work. If a **FAIL** Result code is seen, check these cables. If problems persist, refer to the maintenance book for your configuration.

See "LED Indicators" for information regarding the LED status indicators for the media servers, Cajun Ethernet switch(es), UPSs, and different circuit packs.

NOTE:
Circuit pack positions are usually given by cabinet, carrier, and slot. They may also be given by port. The term “cabinet” refers to an MCC1 Media Gateway, making up one to five port networks, or a stack of SCC1 Media Gateways or 4 G600 Media Gateways in a rack, making up one port network. A port network is defined as a group of media gateways or carriers connected together with one TDM bus.

Task List: Test the Configuration

CAUTION:
To prevent unnecessary trouble tickets, do not enable the alarms (Alarm Origination feature) until all installation and administration procedures are completed.

1. "Check Port Network Status for Each Media Gateway"
2. "Check Circuit Pack Configuration"
3. "Test Media Server Interchange"
4. "Test the IPSI Circuit Pack"
5. "Test Expansion Interface Circuit Packs (S8700 Multi-Connect only)"
6. "Test Time Division Multiplexing Bus for Each Port Network"
7. "Test Expansion Interface Exchange for Each Port Network (S8700 Multi-Connect only)"
8. "Save Translations, if Required"

LED Indicators

Refer to the maintenance book for your configuration. for detailed alarm and LED descriptions. If a maintenance object begins to fail some periodic tests, the media server will generate an alarm. The media server identifies 3 levels of alarms:

- Major Alarms — Failures that cause critical degradation of service and require immediate attention.
- Minor Alarms — Failures that cause some degradation of service, but do not cause a critical portion of the configuration to be inoperable. This condition requires action, but its consequences are not immediate. Problems might be impaired service to a few trunks or stations or interfering with one feature across the entire configuration.
- Warning Alarms — Failures that cause no significant degradation of service or failures in equipment external to the configuration. Warning alarms are not reported to the attendant console or INADS.

Alarms are communicated to users and technicians by entries in the alarm and sys logs and the lighting of LEDs located on the attendant console, on all circuit packs, and, optionally, on customer-designated telephones.

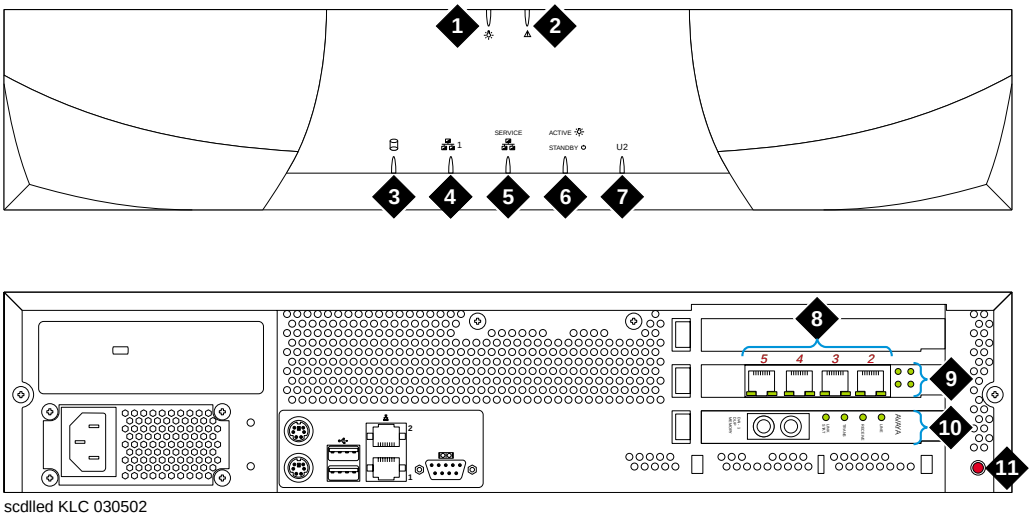
More detailed information is available here for:

- "S8700 Media Server LEDs"
- "Cajun Ethernet Switch LEDs"
- "UPS LEDs"
- "Attendant Console LEDs"
- "Terminal Alarm Notification"
- "Circuit Pack LEDs"
- "DS1 Converter Circuit Pack LEDs"
- "SPAN LEDs"
- "IP Server Interface LEDs"

S8700 Media Server LEDs

The media server has the LEDs shown in "LEDs on front and back of media server":

LEDs on front and back of media server



scdlled KLC 030502

Figure notes

1 Power
2 Configuration fault
3 Hard drive activity
4 Network activity (CNA)
5 Service—configuration health
6 Active or standby mode indicator
7 U2 (not defined)
8 4 NIC ports (the numbers indicate their assigned Ethernet ports)
9 LEDs for the NIC ports
10 LEDs for fiber optic duplication connectivity
11 Status LED (not used)

Testing the Media Server LEDs

You can test some of the LEDs on the front of the media server through the media server web interface. This makes sure that the Active/Standby and U2 LEDs (on the front of the media server) and the transmit LED on the DAJ1 duplication memory card (on the back of the media server) are controllable and not burned out and that the media server is not hung.

NOTE:
The U2 LED is controlled by the S8700 Media Server but does not have an assigned function.

The other LEDs are exclusively under hardware control so will not flash during the test. Refer to the OEM user documentation that comes with the media server for information on those LEDs.

During the 1-minute test, the Active/Standby and U2 LEDs alternate from being on (amber) for 1 second and off for 1 second off. The transmit LED cycles from red (on 1 second, off 1 second) to green (on 1 second, off 1 second).

Using the media server web interface, test the LEDs on the front of the media server:

1. Under Diagnostics, click **Test Server LEDs**.
2. On the Test Server LEDs screen, click **Test LEDs**.
3. Observe the Active/Standby and U2 LEDs on your media server and the transmit LED on your duplication card (back of media server) to ensure they are blinking.

Interpreting the test results

An abnormal condition is indicated if an LED shows any of the following flashing patterns.

- LED flashes **red**. This indicates that the green element is either burned out or not controlled.
- LED flashes **green**. This indicates that the red element is either burned out or not controlled.
- LED flashes between **red** and **amber**. This indicates that the red element is stuck on.
- LED flashes between **green** and **amber**. This indicates that the green element is stuck on.
- LED stays **amber** continuously. This indicates that either the media server is hung or the LED controller is stuck.
- LED stays **off** continuously. This indicates that the media server is hung or powered off, the controller is stuck, or the media server is using a new or different LED controller.

If the media server is hung, you do not need to do anything. It should automatically reboot and fix itself. If the media server does not reboot itself, power it down and then reboot it.

If an LED is clearly stuck or has a burned out element, ignore the indicators until you can conveniently replace the media server.

The LEDs on the back of the media server

There are 2 sets of LEDs on the back of the media server: 1 set for the 4-port NIC card and 1 set for the fiber optic cable used for memory shadowing. The GREEN LEDs to the right of the NIC ports light up when they are in use. The GREEN LEDs to the right of the fiber optic cable indicate that the cables are connected correctly.

Cajun Ethernet Switch LEDs

The Cajun Ethernet Switch has the LEDs shown in "LEDs on Cajun P333T Ethernet switch":

LEDs on Cajun P333T Ethernet switch

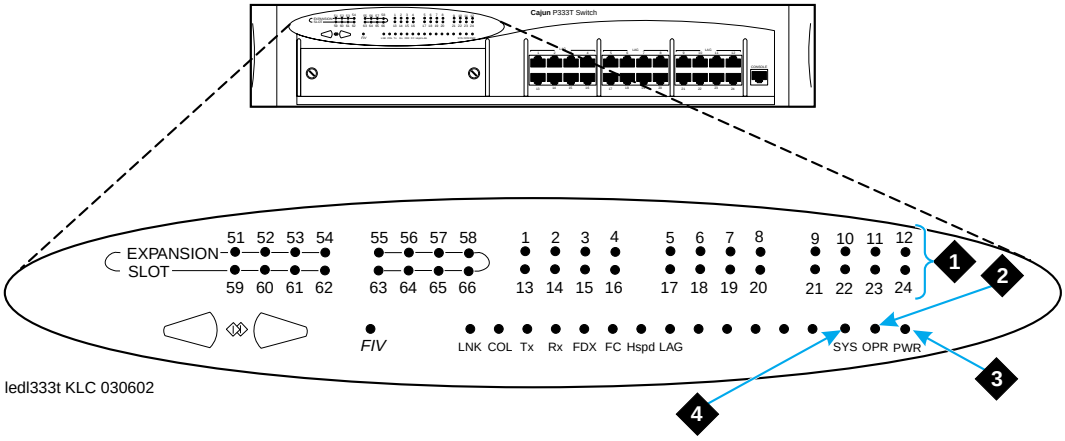


Figure notes

1	Ports in use	**3**	Power
2	CPU boot status	**4**	Lights if this module is the Cajun P33x stack master agent

For descriptions of the other LEDs refer to the quick start guide and user guide that comes with the model of Cajun Ethernet switch you have.

UPS LEDs

The Powerware front panel has the LEDs shown in "LEDs on Powerware 9125 UPS":

LEDs on Powerware 9125 UPS

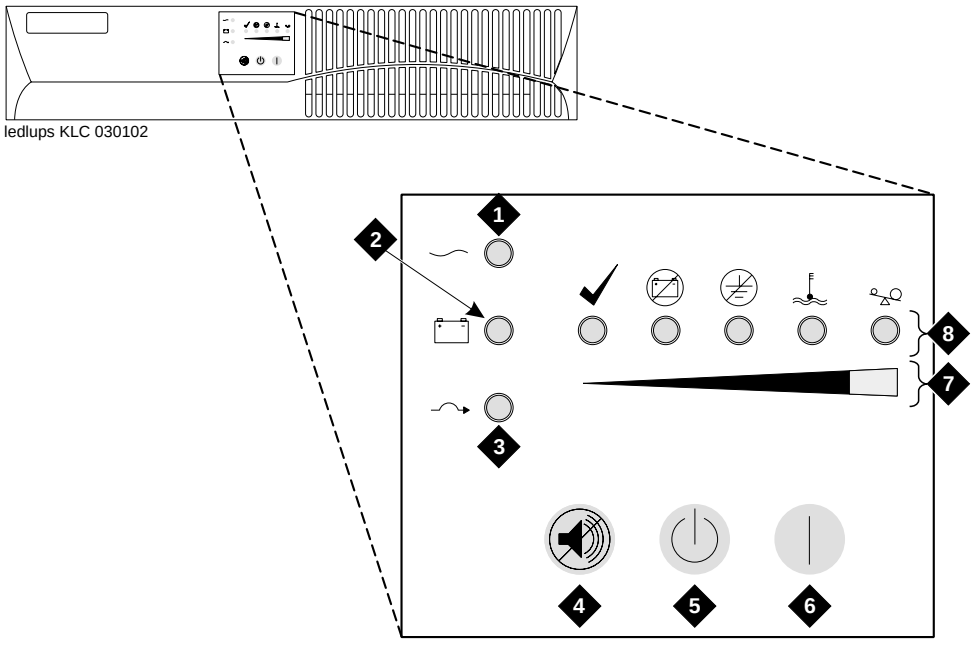


Figure notes

1	Normal mode indicator	**5**	Off button
2	Battery mode indicator	**6**	On button
3	Bypass mode indicator	**7**	Bar graph indicators
4	Test/Alarm reset button	**8**	Alarm indicators

After plugging the UPS in, all the LEDs flash briefly. After a self test, the Normal mode LED flashes, indicating that the UPS is in Standby mode.

For more information on the LEDs, refer to the UPS user's guide that comes with the Powerware 9125 UPS.

Telephone Console LEDS

Telephones and attendant consoles have some alarm LEDs that must be checked out.

Attendant Console LEDs

The console has 2 red LEDs, labeled “ALM” and “ACK”. The ALM LED lights steadily when there is a major or minor alarm at the media server. The ACK LED lights steadily if the alarm has been successfully reported to INADS. If the media server is unable to report the alarm to INADS, the LED flashes; this signals the attendant to call INADS and report the alarm.

Terminal Alarm Notification

Terminal Alarm Notification is an optional feature that displays several types of alarms on telephones with administered feature buttons or the attendant console. A maximum of 10 digital and/or hybrid telephones may be used.

When an alarm occurs, the green status LED associated with the assigned button is in a steady state. The LED may be turned off by pressing the button associated with the LED. If the LED is off and the alarm has not been resolved by the time maintenance reschedules testing, the green status LED resumes its steady state.

IP Server Interface LEDs

The TN2312AP IP Server Interface (IPSI) circuit pack LEDs are shown in "TN2312AP circuit pack faceplate"). It also has a programmable LED display to indicate whether its IP address is dynamic (shows media gateway location) or static (shows I P). See "LED display on the IPSI circuit pack—static address".

TN2312AP circuit pack faceplate

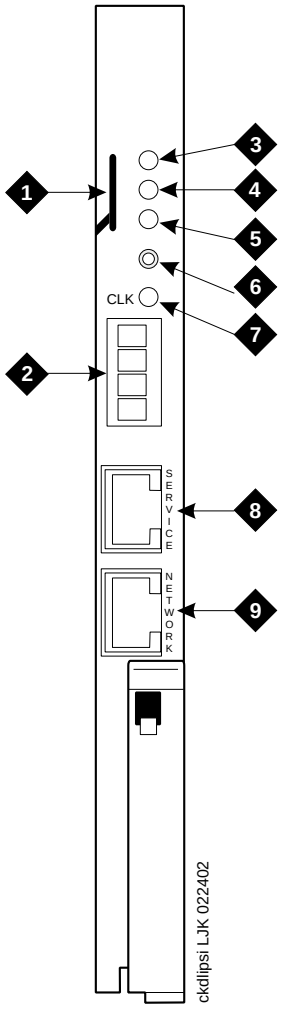


Figure notes

1 Slot for ribbon cable (not used)
2 LED display
3 Red LED
4 Green LED
5 Amber LED
6 Recessed programming button
7 Yellow LED (clock status)
8 Services Ethernet port
9 Network Ethernet port

LED display on the IPSI circuit pack—static address

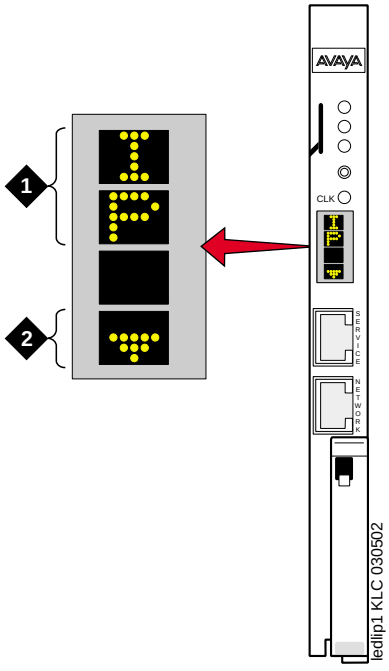


Figure notes

1 IPSI has a static IP address **2** IPSI has connectivity and an IP address

The display also indicates connectivity (see "LED display indicating connectivity status").

LED display indicating connectivity status

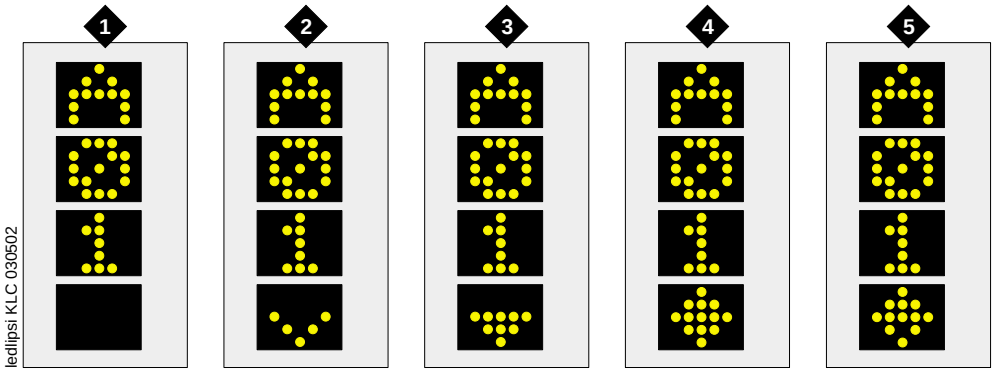


Figure notes

Connectivity Status	1	2	3	4	5
IPSI is connected to media server	no	yes	yes	yes	yes
IPSI has an IP address	no	no	yes	yes	no
Laptop computer is connected to IPSI services port	no	no	no	yes	yes

Circuit Pack LEDs

Typically, each circuit pack has 3 LEDs on the front panel. The "Circuit Pack LEDs" table describes the red, green, and yellow LEDs and their meaning. Also see "Circuit Pack LEDs on Faceplate".

Circuit Pack LEDs

LED Color	Status	Description
Red	Alarm	The media server has detected a fault in this circuit pack. The alarm log should contain an on-board alarm. The red LED is also lit briefly when a circuit pack is inserted or reset. If the circuit pack passes its initialization tests, the LED goes out.
Green	Testing	The media server is currently running tests on this circuit pack as part of background maintenance or demand testing. This LED is also lit during initialization tests when a circuit pack is inserted or reset.
Yellow	Busy	The circuit pack is currently in use.

Circuit Pack LEDs on Faceplate

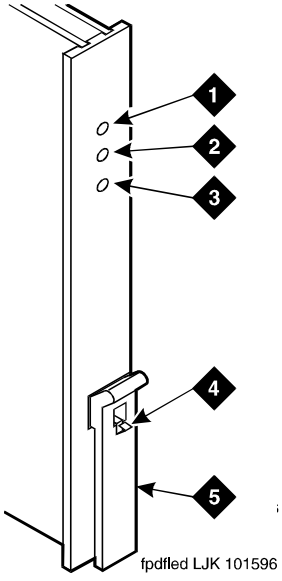


Figure notes

1 Alarm LED (Red)

2 Test LED (Green)

3 Busy LED (Yellow)

4 Latch Pin

5 Locking Lever

DS1 Converter Circuit Pack LEDs

Eleven LEDs provide an indication of the state of the "TN1654 DS1 Converter Circuit Pack LEDs" and the T1/E1 facilities. The top group has the standard red, green and yellow LEDs. The red LED indicates an alarm condition and the green LED indicates testing in progress. The 4 SPAN LEDs indicate the status of the T1/E1 facilities. The four STATUS LEDs are currently unused and remain off.

TN1654 DS1 Converter Circuit Pack LEDs

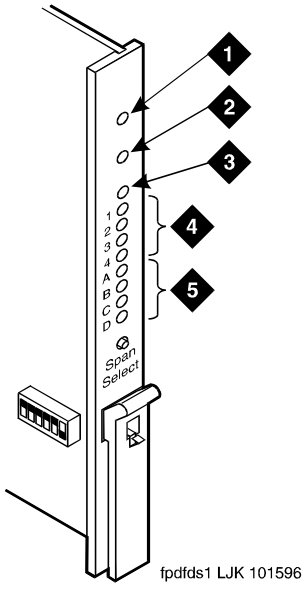


Figure notes

1	Alarm LED (Red)	**4**	STATUS LEDs
2	Test LED (Green)	**5**	SPAN LEDs
3	Busy LED (Yellow)		

The yellow LED is used to indicate the state of the fiber interface, the fiber channel, the control channel, and the communications link to the SPE in the following manner and order of priority. See "DS1 Converter Yellow LED Flashing States".

DS1 Converter Yellow LED Flashing States

LED on	LED off	Condition
0.1 second	0.1 second	Fiber out-of-frame or fiber loss of signal
0.5 second	0.5 second	In frame, fiber channel down. The fiber channel communicating between the DS1 Converter and the other fiber endpoint (EI or SNI) is down.
1 second	1 second	In frame, control channel down. The control channel between the 2 DS1 Converters in the DS1 Converter complex is down.
2 seconds	0.2 second	No response from the media server. The media server is not acknowledging messages from the DS1 Converter or the communications link to the media server is down.
solid on		DS1 Converter active. This is the normal state for an active DS1 Converter.
	solid off	DS1 Converter standby. This is the normal state for a standby DS1 Converter in critical reliability configurations (duplicated PNC).

SPAN LEDs

The 4 SPAN LEDs indicate the status of the 4 T1/E1 facilities. A SPAN LED is in one of the following states:

- Solid on yellow: Facility is operational and alarm free.
- Blinking yellow for 2 seconds, off 0.1 seconds: Facility is operational and alarm free AND is carrying the control channel (facility A or B only).
- Solid on red: Facility is alarmed.
- Solid off: Facility is not administered or has been busied out.

Testing Port Network Equipment

Check Port Network Status for Each Media Gateway

The port network status may suggest problem areas. Tests described later provide more specific diagnostic information.

1 Type **status port-network** ***number*** **<*1-64*>** and press **Enter**.

Verify the screen displays a Port Network Status screen similar to the one in "Sample Port Network Status Screen for Cabinet 1—S8700 Multi-Connect".

Verify these service states:

Field	Service State
TDM Bus A	in
TDM Bus B	in
Tone/Clock	in
EXP-LINK[1]	in
PKT	in

1. The cabinet /carrier/slot numbers for the fiber optic cables are listed. For example, 01A01 in the figure refers to media gateway stack 01, carrier A, and slot 01

Sample Port Network Status Screen for Cabinet 1—S8700 Multi-Connect

```
status port-network 1
                              PORT NETWORK STATUS

   Major  Minor  Warning Carrier   PN Control      FIBER-
PN Alarms Alarms Alarms  Locs   Active   Standby   LINK     Endpoints   Mode

1    1      0      195   01A    up       up        1  B-PNC 01B02-03E04 standby
                         01B                       1  A-PNC 01A01-01E04 active



TDM Service  Control  Dedicated              TONE/  Service  System   System
Bus  State   Channel   Tones                 CLOCK  State    Clock    Tones

 A   in         y        n                   01B     in      standby  standby
 B   in         n        y                   01A     in      active   active

             Service     Major   Minor   Bus    Open Bus
          PKT  State       Alarms  Alarms  Faults  Leads

          1       in         n       n       0       0

Command:
```

Check Circuit Pack Configuration

The list configuration report provides a list of circuit packs connected to the configuration and recognized by the software.

1. Type **list configuration all** and press **Enter**.
2. Verify the screen displays list configuration similar to "Sample System Configuration Screen — Page 4, S8700 Multi-Connect". Make sure the software is communicating with each circuit pack (except power supply circuit packs). Do not attempt to correct any problems until after the diagnostic tests that you run later in the configuration tests.
3. Note any boards with a **VINTAGE** column entry of **NO BOARD** or **CONFLICT**.
4. A **u** indicates unassigned ports, and a number indicates the port has been translated.

Sample System Configuration Screen — Page 4, S8700 Multi-Connect

```
list configuration all                                          Page   4

                            SYSTEM CONFIGURATION

Board                                                    Assigned Ports
Number   Board Type              Code     Vintage    u=unassigned t=tti p=psa

01B01    IP SERVER INTFC         TN2312AP HW33 FW045 01 02 03 04 05 06 07 08
01B02    EXPANSION INTRFC         TN570C  000002
01B03    DS1 INTERFACE            TN464F  000020     01 02 03 04 05 06 07 08
                                                     09 10 11 12 13 14 15 16
                                                     17 18 19 20 21 22 23 24
                                                     25 26 27 28 29 30 31 u
01B05    DS1 INTERFACE            TN464F  000020     01 02 03 04 05 06 07 08
                                                     09 10 11 12 13 14 15 16
                                                     17 18 19 20 21 22 23 24
                                                     25 26 27 28 29 30 31 u
01B06    DS1 INTERFACE            TN464F  000006     01 02 03 04 05 06 07 08
                                                     09 10 11 12 13 14 15 16
                                                     17 18 19 20 21 22 23 24
                                                     25 26 27 28 29 30 u  u


              press CANCEL to quit --  press NEXT PAGE to continue
```

Test Media Server Interchange

CAUTION:

An interchange causes a brief service interruption.

Use the media server web interface.

1. Click on **Interchange Servers** to view the Interchange Servers screen.
2. Do *not* check “Force interchange regardless of server status.” to allow file synchronizations to complete before the interchange proceeds.
3. Click on Interchange to interchange the active and standby servers.
4. Click on Interchange again to interchange the active and standby servers back to the original status.

Test the IPSI Circuit Pack

Use Avaya Site Administration.

1. Type **test ipserver-interface *UUC*** and press **Enter** to test all clock and packet interface components within the IPSI circuit pack.
2. Verify the screen displays Test Results screen similar to "Sample IPSI 01A Test Results Screen — Page 1, S8700 Multi-Connect".

Sample IPSI 01A Test Results Screen — Page 1, S8700 Multi-Connect

```
test ipserver-interface 1a                                          Page   1

                                TEST RESULTS

Port        Maintenance Name  Alt. Name Test No. Result           Error Code

01A         TONE-BD                     46       PASS
01A         TONE-BD                     52       PASS
01A0201     ETR-PT                      42       PASS
01A0201     ETR-PT                      43       PASS
01A0202     ETR-PT                      42       PASS
01A0202     ETR-PT                      43       PASS
01A0203     ETR-PT                      42       PASS
01A0203     ETR-PT                      43       PASS
01A0204     ETR-PT                      42       PASS
01A0204     ETR-PT                      43       PASS
01A0205     ETR-PT                      42       PASS
01A0205     ETR-PT                      43       PASS
01A0206     ETR-PT                      42       PASS
01A0206     ETR-PT                      43       PASS
01A0207     ETR-PT                      42       PASS

              press CANCEL to quit --  press NEXT PAGE to continue
```

Test Expansion Interface Circuit Packs (S8700 Multi-Connect only)

Check each Expansion Interface (EI) circuit pack in the media gateway.

1 Type **test board *UUCSS*** where *UUCSS* is the cabinet, carrier, and slot for an Expansion Interface (EI) circuit pack in the media gateway, and press **Enter**.

NOTE:
Labels on the port network and carrier and on the strip under the circuit pack contain this information.

2 Verify the screen displays test results similar to "Sample Test Results for Expansion Interface Board 2A01—S8700 Multi-Connect". This example is for board 2a01.

3 If any result is **FAIL**, check the connections for the fiber optic link.

4 Repeat Steps 1 and 2 for each Expansion Interface circuit pack.

Sample Test Results for Expansion Interface Board 2A01—S8700 Multi-Connect

```
                                TEST RESULTS

Port      Maintenance Name  Alt. Name Test No. Result     Error Code

02A01     EXP-INTF                    237      PASS
02A01     EXP-INTF                    238      PASS
02A01     EXP-INTF                    240      PASS
02A01     EXP-INTF                    241      PASS
02A01     EXP-INTF                    244      PASS
02A01     EXP-INTF                    316      PASS
```

Test Time Division Multiplexing Bus for Each Port Network

Check each TDM bus for each Port Network (PN) in the configuration.

1. Type **test tdm port-network 1** and press **Enter**.
2. Verify a test results screen similar to "Sample Test Results for TDM Bus Port Network 1" is displayed.
3. If result is **FAIL** for any test, check the connectors of the TDM bus cables in PN 2.
4. Repeat these steps for each PN to check the TDM bus cables.

Sample Test Results for TDM Bus Port Network 1

```
test tdm port-network 1

                                TEST RESULTS

Port       Maintenance Name  Alt. Name Test No. Result          Error Code

PN 01A      TDM-BUS                294     PASS
PN 01A      TDM-BUS                296     PASS
PN 01A      TDM-BUS                297     ABORT         1005
PN 01B      TDM-BUS                294     PASS
PN 01B      TDM-BUS                296     ABORT         1005
PN 01B      TDM-BUS                297     PASS
```

Test Expansion Interface Exchange for Each Port Network (S8700 Multi-Connect only)

If the configuration is critical reliability, test the expansion interface exchange for each Port Network (PN).

1. Type **status port-network *number* <*1-64*>** and press **Enter**.

   This displays the standby expansion link. See "Sample of Port Network Status before Expansion Link is Set—S8700 Multi-Connect".

2. Type **set expansion-link *UUCSS***, where ***UUCSS*** is one of the cabinet, carrier, and port locations of the standby expansion link, and press **Enter**.

3. Verify the bottom of the screen displays:

   Command successfully completed

4. Type **status port-network *number* <*1-64*>** and press **Enter**.

   A screen similar to "Sample of Port Network Status after Expansion Link is Set—S8700 Multi-Connect" displays.

5. Verify that the **MODE**s of the expansion links have changed.

6. If any problems are indicated, check the TDM cables and the inter-cabinet cables (ICC) in the associated port network.

Sample of Port Network Status before Expansion Link is Set—S8700 Multi-Connect

```
status port-network
                          PORT NETWORK STATUS

   Major    Minor Warning    Carrier   PNC Status   ATM    PNC
PN Alarms  Alarms Alarms     Locs    Active Standby Conn  Endpoints       Mode
1  0       1      19         01A     up     2       A-PNC 01D01-AT02A    active
                             01B            1       A-PNC 01C01-AT01A active
                             01C
                             01D


TDM Service Control Dedicated                TONE/ Service  System   System
Bus State   Channel Tones                    CLOCK State    Clock    Tones
A    in      n      n                        01A   in     standby standby
B    in      y      y                        01B   in     active  active


               Service     Major    Minor    Bus     Open Bus
               PKT State  Alarms   Alarms   Faults   Leads
                1   in     n        n        0        0
```

Sample of Port Network Status after Expansion Link is Set—S8700 Multi-Connect

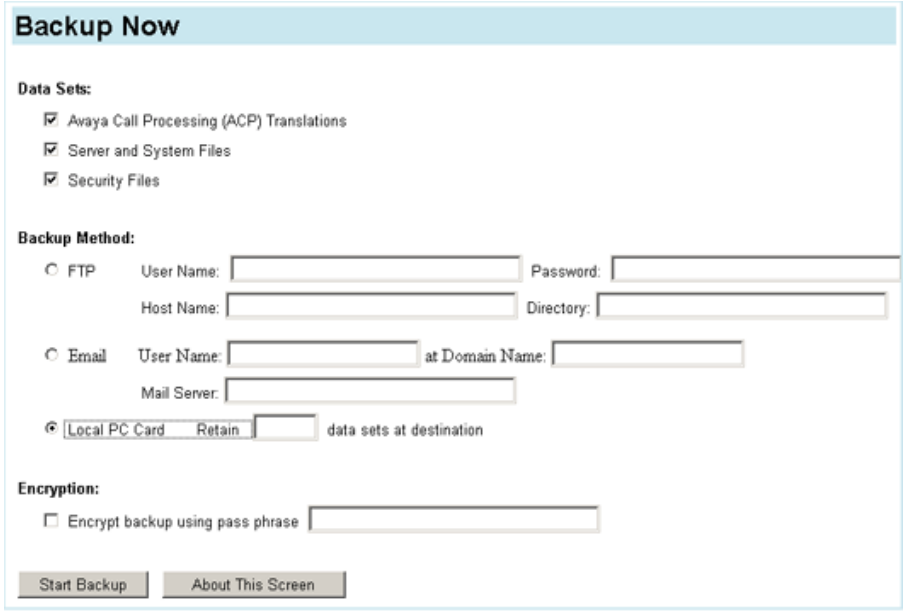
```
status port-network
                              PORT NETWORK STATUS

   Major  Minor  Warning Carrier   PN Control      FIBER-
PN Alarms Alarms Alarms  Locs   Active   Standby   LINK     Endpoints   Mode

1    1      0      220   01A    up       up        1  B-PNC 01B02-03E04 standby
                         01B                        1  A-PNC 01A01-01E04 active



TDM Service  Control  Dedicated              TONE/  Service  System   System
Bus  State   Channel   Tones                 CLOCK  State    Clock    Tones

 A   in         y        n                   01B     in      standby  standby
 B   in         n        y                   01A     in      active   active

               Service     Major   Minor   Bus    Open Bus
           PKT  State       Alarms  Alarms  Faults  Leads

           1       in         n       n       0       0

Command:
```

Save Translations, if Required

Use the media server web interface.

If any administration changes are made, save the translations and back them up.

1 Under Data Backup/Restore, click **Backup Now**.



2 Select the data sets and the backup method.

3 Click **Start Backup** to begin the back up process.

Testing Telephones and Other Equipment

This section describes how to test the telephones and other equipment. Perform these tests after the equipment has been wired to the media gateway and after the customer's data for that equipment has been administered. The tests are acceptance tests and provide some assurance that the Avaya S8700 Media Server for IP Connect Configuration will perform properly after installation and administration.

If problems occur or more extensive tests are required, refer to the maintenance book for your configuration.

Task List: Perform Acceptance Tests

1. "Make Test Calls"
2. "Test 302C Attendant Console"
3. "Test Selector Console"
4. "Test External Ringing"
5. "Test Queue Warning Indicator"
6. "Test Integrated Announcement"
7. "Record Announcement"
8. "Playback Announcement"
9. "Delete Announcement"
10. "Test Music-on-Hold"
11. "Test Emergency Transfer (S8700 Multi-Connect only)"
12. "Test Remote Access Interface"
13. "Test Terminating Trunk Transmission"
14. "Test the C-LAN Connectivity"
15. "Test Stratum 3 Clock (if used—S8700 Multi-Connect only)"
16. "Resolve Alarms"

Make Test Calls

Make 2 calls from 1 telephone to another telephone. Make the first call by dialing a telephone and make the second call by dialing a trunk access code and a Listed Directory Number (LDN).

Test 302C Attendant Console

Check all lamps are operational and call another telephone in the configuration.

1. Simultaneously press and hold the Ringer Volume up button and the POS BUSY button.

   This puts the console in the self-test mode.

NOTE:
Releasing the buttons returns the console to normal mode.

2. Verify all lamps on display light and remain lighted.

   Each row of lamps on the console lights and goes dark in sequence from top to bottom.
3. Press Start and listen for dial tone.
4. The green lamp associated with Idle Call Appearance lights up.

   The Position Available lamp goes dark.
5. Dial number associated with a working telephone.

   Audible ringing tone is heard in ear piece.
6. Press Release.

   Audible ringing tone is silenced. The green lamp associated with idle call appearance button goes dark. The Position Available lamp lights.

Test Selector Console

Check that all selector console lamps are operational. Make call to a telephone in the configuration.

1. Simultaneously press and hold the Ringer Volume up button and the POS BUSY button on the attendant console. This puts the console in the self-test mode.
2. Each row of lamps on the selector console lights and goes dark in sequence from top to bottom.
3. Press hundreds group select button. The hundreds group select lamp lights and any lamps associated with busy telephone light.
4. Press Direct Extension Selection (DXS) button for the desired extension. Audible ringing tone is heard in the ear piece on attendant console.
5. On attendant console, press Release. Audible ringing tone is silenced.

Test External Ringing

Make a test call to the attendant console to verify ringing device sounds when the Night lamp on console is lighted. If ringing device has not been installed by customer, connect spare telephone to information outlet reserved for ringing device and make test call.

Test Queue Warning Indicator

Make a test call to an extension associated with a Uniform Call Distribution (UCD) or Direct Department Calling (DDC) group, and verify the queue warning indicator lamp lights. If the queue warning indicator has not been installed by customer, connect a spare telephone to the information outlet reserved for queue warning indicator and make a test call.

Test Integrated Announcement

The TN750B/C and TN2501AP Announcement circuit packs provide the ability to store messages. The messages can be recorded from telephones on- or off-premises and have flexible message lengths. The telephone selected as the test telephone must have a class of service (COS) with console permission enabled.

Record Announcement

1. Select a test telephone with console permissions enabled.
2. Dial the access code followed by the integrated announcement extension number.
3. When you hear a dial tone, press **1**. When you hear a beep or stutter tone, speak the announcement into the telephone.
4. When done, press **#** if a digital phone or hang up if an analog phone to stop the recording. You then hear a dial tone.

Playback Announcement

1. If using a digital phone, press **2** to hear the announcement. When the announcement is over, you hear a dial tone. If satisfied, hang up.
2. If using an analog phone, dial the integrated announcement extension number to hear the announcement. When the announcement is over, you hear a dial tone. If satisfied, hang up.

Delete Announcement

1. Dial the access code followed by the integrated announcement extension number.
2. When you hear a dial tone, press 3 to delete the announcement and end the recording session. A confirmation tone is heard when the announcement is deleted.

Test Music-on-Hold

Verify music is provided to a held party during any hold interval.

Test Emergency Transfer (S8700 Multi-Connect only)

Put configuration in emergency transfer mode and make call using emergency transfer telephone. There may be up to 4 Emergency Transfer panels on a wall in the phone closet, depending on the configuration.

Test Remote Access Interface

Test the communication link between the media server and the remote access interface and verify the alarm notification process. Make a remote test from the remote interface to the Avaya S8700 Media Server and a local test from the Avaya S8700 Media Server to the remote interface.

In some countries, this remote access interface is not allowed. Contact your Avaya representative.

Test Terminating Trunk Transmission

The Terminating Trunk Transmission Test provides for extension number access to 3 tone sequences that can be used for trunk transmission testing from the distant end of the trunks.

1. Type **change system-parameters maintenance** and press **Enter** and go to screen 2.
2. Under TERMINATING TRUNK TRANSMISSION TEST (Extension), type in 3 extension numbers in the 3 fields provided:

   Test Type 100:_____Test Type 102:_____Test Type 105:_____

Test Type	Test Features
Test type 100	5.5 seconds of 1004 Hz tone at 0 dB Quiet until disconnect; disconnect is forced after 1 minute
Test Type 102	9 seconds of 1004 Hz tone at 0 dB 1 second of silence Cycle is repeated until disconnect, which is forced after 24 hours
Test Type 105	9 seconds of 1004 Hz tone at -16 dB 1 second of silence 9 seconds of 404 Hz tone at -16 dB 1 second of silence 9 seconds of 2804 Hz tone at -16 dB 30 seconds of silence 0.5 seconds of test progress tone (2225 Hz) About 5 seconds of silence Forced disconnect

Test the C-LAN Connectivity

1. To test the external IP connections, ping the C-LAN circuit pack and ping a known computer connected to your network. If everything is configured correctly, the **Result** column on the Ping Results screen reads ***PASS***. If it reads ***ABORT***, verify the IP-address information and check the connectivity, including the cabling.
2. To ping the C-LAN server, type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter.**

   The variable ***nnn.nnn.nnn.nnn*** is the IP address of the TN799DP C-LAN circuit pack and ***UUCSS*** is the cabinet, carrier, and slot of the TN799DP C-LAN circuit pack.
3. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter.**

   The variable *nnn.nnn.nnn.nnn* is the IP address of another computer beyond the gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN799DP C-LAN circuit pack.

Test Stratum 3 Clock (if used—S8700 Multi-Connect only)

These procedures test the ability of the Stratum 3 clock to correctly provide timing and alarms to the media server.

⚠ CAUTION:
The following procedures are destructive to DS1 data and should not be attempted while DS1 facilities are active.

Check for Red LEDs

1. Turn on the Stratum 3 clock and wait 40-50 seconds to allow the system to complete the on-board diagnostics before checking LEDs.
2. If there are any red LEDs, follow the procedures in "Stratum 3 Clock LED Indicators".

Stratum 3 Clock LED Indicators

Card	LED Label	Procedure
PAI	REF A	Check that the CI circuit pack on the left is inserted properly. Check wiring for DS1 in carrier A which connects the media gateway to the CSU and the External Synchronization Clock at the MDF through a Y-cable assembly. If all else fails to clear the LED then replace the circuit pack.
PAI	REF B	Check that the CI circuit pack on the right is inserted properly. Check wiring for DS1 in carrier B which connects the media gateway to the CSU and the External Synchronization Clock at the MDF through a Y-cable assembly. If all else fails to clear the LED then replace the circuit pack.
PAI	ST A	Replace the ST3 card
PAI	ST B	Replace the ST3 card

Stratum 3 Clock LED Indicators — *Continued*

Card	LED Label	Procedure
CI	FAIL	Check wiring for its associated DS1 reference and replace the circuit pack if necessary
ST3	FAIL	Replace the circuit pack
ST3	LOCK	Ignore this LED
ST3	HOLDOVER	Ignore this LED
ST3	FREE RUN	Ignore this LED
TOCA	FAIL	Replace the circuit pack
TOCA	PORT ALM	Replace the circuit pack if necessary

Verify Timing to the Media Server

1. To administer the Stratum 3 clock, type **change synchronization** and press **Enter**.
2. Type **3** in the **stratum** field.
3. Type the port network number where the TN780 Tone-Clock circuit packs reside in the **port network** field.

NOTE:
Wait 1 minute for the software to reconfigure the media server synchronization.

4. Verify the results of test 649. If test 649 fails with a code of 2101, then check the wiring for **EXTSYN0** and **EXTSYN1**. Refer to the maintenance book for your configuration.

If test 649 is successful, then the media server is getting correct timing from the Stratum 3 clock.

Resolve Alarms

As a last step, inspect the alarms log.

Use the media server web interface.

1. Click on **View Current Alarms** and see if any alarms were generated. If so, resolve any alarms that may exist using the maintenance book for your configuration.

Troubleshooting an Installation

This section provides some simple strategies for troubleshooting an installation of an S8700 Media Server. It focuses on possible problems when

- ‘‘Installing the Media Server Hardware’’ on page 297
- ‘‘Configuring the Media Server Hardware’’ on page 298
- ‘‘Installing the License and Avaya Authentication Files’’ on page 299

Installing the Media Server Hardware

The media server hardware includes the

- Avaya S8700 Media Servers
- Ethernet switch
- Uninterruptible Power Supply
- TN2312AP IP Server Interface

Problem	Solution
No power to the UPS	- Make sure the UPS is plugged into the outlet. - Make sure the outlet has power - Refer to user’s guide that comes with UPS for other solutions.
No power to the Ethernet switch	- Make sure the Ethernet switch is plugged into the UPS or outlet. - Make sure the UPS or outlet has power - Refer to user’s guide that comes with the Ethernet switch for - other solutions.
No power to the media server	- Make sure the media server is plugged into the UPS. - Make sure the UPS has power
Servers aren’t shadowing	- Make sure you are using a crossover cable. - Make sure fiber optic cable is plugged in correctly. RX to TX and TX to RX.
IPSI LEDs flash	- Make sure it’s in the correct slot: (Tone-Clock slot for S8700 Multi-Connect, slot 2 for S8700 IP Connect) - Ping IPSI from server - Ping server from IPSI (connected to top Services port on IPSI).

Configuring the Media Server Hardware

Problem	Solution
Can't log into UPS subagent	- Make sure the SNMP Subagent is installed in the UPS. - Make sure you are connected to the correct Ethernet port. - Make sure you have the correct login ID and password. Refer to the user's guide that comes with the SNMP Subagent. - Make sure the the network card on the laptop is configured correctly. Refer to the job aid entitled *Pre-Installation Information.*
Can't log into Ethernet switch	- Make sure you are connected to the correct Ethernet port. (On Cajun Ethernet switch, it's the port marked Console) - Make sure you have the correct login ID and password. Refer to the user's guide that comes with the Ethernet switch. - Make sure the the network card on the laptop is configured correctly. Refer to the job aid entitled *Pre-Installation Information.*
Can't log into media server	- Make sure you are connected to the correct Ethernet port. (Default is port 2 [Eth1] on the back of the server). - Make sure you are using a crossover cable between the laptop and server. - Make sure the MAC cache is cleared. In an MS-DOS window, type **arp -d 192.11.13.6** and press **Enter**. - Make sure you have connectivity. In an MS-DOS window, type **ping 192.11.13.6** and type **Enter**. - Make sure the the network card on the laptop is configured correctly. Refer to the job aid entitled *Pre-Installation Information.*
Can't access the web interface	- Make sure you are plugged into the Services port (2 [Eth1]) - Make sure you are using the correct IP address: 192.11.13.6 - Make sure you are using the correct login and password. - Make sure your browser is configured correctly. Refer to the job aid entitled *Pre-Installation Information*.
Can't access MultiVantage software	- Make sure you are using the correct IP address: 192.11.13.6 and port (5023) - Make sure you are using the correct login and password.
LED display on IPSI is flashing	- IPSI LED has not been programmed with switch and location (DHCP) - IPSI LED has not had an IP address assigned to it (static IP addressing)

Problem	Solution
Can’t access IPSI for static addressing	- Make sure you are plugged into the Services (top) port - Make sure the ARP cache is cleared. In an MS-DOS window, type **arp -d 192.11.13.6** and press **Enter**.
No "V" on IPSI LED	- IPSI is not connected to Ethernet switch or network. Connect cable to bottom port on IPSI faceplate and to the Ethernet switch.
"V" on IPSI LED is not filled in	- IPSI does not have an IP address assigned to it. - IPSI has not been administered.

Installing the License and Avaya Authentication Files

Problem	Solution
Can’t get files from RFA site	- Provided wrong SAP number.
License file won’t install	- Make sure there are not two license files on the server. If so, delete one of them.
Media server is in no license mode	- Normal when license file is first installed because it cannot see the IPSIs; they do not have IP addresses yet.
ASG doesn’t work	- Re-install Avaya authentication files.
Can’t place any calls	- Media server is in no license mode.

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